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Original Article

Factors That Affect the Quality of Life of Caregiving Nursing Technicians of Psychiatric Patients

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Abstract

Background: The importance of the role of nurse technicians lies in the fact that they are becoming the main providers of health care for psychiatric patients, in addition to providing them with appropriate care. We aimed to examine predictors of quality of life of nurse technicians caring for psychiatric patients.

Methods: The sample consisted of 260 nurse technicians caring for psychiatric patients at the Special Hospital for Psychiatric Diseases "Dr Slavoljub Bakalović" in Vršac and the Special Hospital for Psychiatric Diseases in Kovin, Serbia. The following instruments were used in the study: a questionnaire to collect sociodemographic characteristics, the World Health Organization Quality of Life Self-Assessment Questionnaire – Short Version, the Depression Anxiety Stress Scales, the Brief Resilience Scale, and the Fatigue Assessment Scale – FAS Serbian and the Zarit Stress Interview.

Results: On the physical and mental aspects of the quality of life of medical technicians, the greatest negative impact is the physical aspect of fatigue (P=0.036) and anxiety (P=0.017), and the positive impact is the number of household members (P=0.001). On the environmental aspect of the quality of life, the greatest negative impact is the burden of caregivers (P=0.000).

Conclusion: Due to unique working environment of care-giving medical nurses, the quality of life has become very considering aspect. Fatigue, stress, anxiety can have a cumulative effect of those individuals, and lead to the burnout syndrome.

Keywords: Nurses-technicians; Brief resilience scale; Quality of life

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Introduction

The care of psychiatric patients poses new challenges related to the demands of the socio-economic, cultural and health environment. The need for long-term care of psychiatric patients with multiple pathologies or advanced chronic diseases suggests that the support of nursing technicians has become increasingly important (1). The importance of their role also lies in the fact that they are becoming the main providers of health care for psychiatric patients, in addition to providing them with appropriate care. Nursing technicians who provide long-term hospital care to psychiatric patients are exposed to numerous factors that can lead to the development of burnout syndrome (2, 3), and an increased risk of absenteeism, low job satisfaction, and increased intention to quit (4). Part of the stress stems from burnout, a chronic psychological syndrome of perceived job demands that exceed perceived resources in the work environment. Caring for a seriously ill person can have a major impact on the lives of nurses, affecting their psychosocial, physical, and emotional well-being (5).

Thus, there are many negative effects that the burden of nurses has on their health, with the appearance of anxiety, depression, and deterioration of health status and consequently quality of life (6-8). However, many authors suggest that quality of life can be improved even when nurses' report increased workload, reinforcing the conceptual distinction between workload and quality of life (9). This phenomenon can be explained by the subjective component of workload, which refers to the way nurses experience their caregiving tasks, such that they may feel burdened but still value caregiving as an enriching experience for their lives (10). Some research has shown that caregiving has some positive elements, mainly in terms of resilience and post-traumatic stress (11). Resilience is associated with greater capacity for new strengths and greater social resources and is inversely related to depression, anxiety and perceived workload (12). Measuring and improving nurses' workload should be central goals of policy and intervention. It is also necessary to implement coping strategies to protect the quality of life of nursing technicians and thus overcome the cognitive, emotional and behavioral demands they face (13). Moreover, studies have shown that nursing technicians caring for psychiatric patients who were able to develop coping strategies were able to reduce emotional impact and feelings of fatigue (14).

Taking all of the above into account, it is important to examine the predictors of quality of life of nursing technicians caring for psychiatric patients in different contexts and to examine the association with their level of fatigue and mental health.

Materials and Methods

The research was designed as a cross-sectional study on a sample of 260 nurse technicians caring for psychiatric patients at the Special Hospital for Psychiatric Diseases "Dr Slavoljub Bakalović" in Vršac and the Special Hospital for Psychiatric Diseases in Kovin.

The sample was selected in accordance with the following inclusion criteria: the respondent is a nurse technician caring for psychiatric patients, aged 19 and over, in an indefinite employment relationship during the research period and who gave voluntary consent to participate in the research.

Exclusion criteria were: nurse-technician under 19 years of age, intern/volunteer, employee on sick leave or annual leave, employee who had a work discontinuity for a period longer than one year (due to absence due to professional development at another institution, longer absence from work due to sick leave), employees who were exposed to major psychophysical trauma (independent of the professional environment) in the previous six months, employees who did not accept participation in the research.

The research was conducted during November and December 2024 after obtaining approval

from the Ethics Committee of the reference institution and during the research, the researchers adhered to the rules of the Declaration of Helsinki and Good Clinical Practice.

The following instruments were used in the study:

1. A specially designed questionnaire to collect sociodemographic data on nurse technicians
2. The World Health Organization Quality of Life Self-Assessment Instrument – Short Version (WHOQOL-BREF) was used to assess quality of life. WHOQOL-BREF is a self-assessment measure consisting of 26 items on a five-point Likert scale. This instrument was developed to measure physical, psychological, social, and environmental aspects of subjective well-being. Domain scores are in the positive direction (higher scores indicate better quality of life), with a score range of 4-20 that was transformed into a scale of 0-100 following the standard procedure defined in the World Health Organization Shortened Instrument for Quality of Life Assessment User Manual (15).
3. The Depression Anxiety Stress Scale (DASS-21) it consists of a set of 3 subscales with 7 questions each, designed to assess states of depression, anxiety, and stress present in the previous week on the 4-point Likert scale. Range of total scores for scales goes from 0 to 21 and measure severity of symptoms. For Depression: 0–4 normal; 5–6 mild depression; 7–10 moderate depression; 11–13 severe depression; ≥ 14 very severe depression. For Anxiety: 0–3 is considered normal; 4–5 mild anxiety; 6–7 moderate anxiety; 8–9 severe anxiety; ≥ 10 very severe anxiety. For the Stress: 0–7 is considered normal; 8–9 mild stress; 10–12 moderate stress; 13–16 severe stress; ≥ 17 very severe stress. Very serious symptomatology is defined by a depression subscale score of 14+, anxiety of 10+, and stress of 17+ (16).
4. The Brief Resilience Scale, created by Smith et al., was used to assess resilience. The short resilience scale is unidimensional and consists of six items. Respondents choose an answer on a five-point Likert-type scale, from 1 - completely false, to 5 - completely true. The total score on this scale is the arithmetic mean of all six items (17).
5. The Fatigue Assessment Scale – FAS Serbian was used to measure the presence of fatigue. The scale consists of 10 items presented on a five-point Likert scale (1 – never, 5 – always). Five items refer to physical indicators of fatigue and the other five to indicators of mental fatigue, and it is also possible to calculate a summation score as a general indicator of fatigue (18).
6. The Zarit Burden Interview was used to assess the burden of nursing technicians. The questionnaire consists of 22 questions related to the impact of caregiving on the physical and emotional health, as well as social activities and financial situation of nursing technicians. Each question in the questionnaire is a statement that respondents are asked to confirm using a five-point Likert scale, with categories ranging from 0 (never) to 4 (almost always) (19).

Statistical processing and analysis of data was performed using the IBM SPSS Statistics v.23 statistical package (IBM Corp., Armonk, NY, USA). Within the framework of descriptive statistical analysis, numerical variables were presented using the minimum and maximum values, average values and standard deviation. Categorical variables were presented using absolute and relative frequencies. The Kolmogorov-Smirnov normality test was applied to check the normality of the data distribution. The Cronbach alpha coefficient values were calculated to check the reliability of the measurement scales (Table 1).

Table 1: The Cronbach alpha coefficient values

Scales	Number of statements	The Cronbach alpha coefficient
Quality of life	24	0,84
DASS-21	21	0,94
Fatigue scale	10	0,72
Resilience scale	6	0,62
Zarit stress interview	22	0,91

To analyze the influence of socio-demographic characteristics on the quality of life of nursing technicians, the Student's *t* test for independent samples was applied in the case of categorical variables and the method of linear correlation and regression, i.e. the interpretation of the value of the Pearson correlation coefficient for the case of numerical variables. To analyze the relationship between the scores of dimensions related to quality of life and the scores related to depression, anxiety and stress, resilience and burden, the method of linear correlation and regression was applied, i.e. the value of the Pearson correlation coefficient was interpreted.

To determine the predictor variable that has the greatest unique impact on the quality of life of nursing technicians, a predictor model was created from the variables that had a significant impact on their quality of life. Standard multiple regression analysis was applied for this analysis. Results were considered statistically significant if the *P* value was less than 0.05.

Results

The sample consisted of 260 nurse technicians, aged 19 to 64 years, with an average age of 41.52±11.89 years. There were more women among the respondents (68.08%). The socio-demographic characteristics of the respondents are presented in Table 2.

Table 2: The socio-demographic characteristics of the respondents

Variables		N(%)
Age(yr)		41.52±11.89
Sex	Female	177(68.08%)
	Male	83(31.92%)
Education	High school	190(73.08%)
	Higher education	27(10.38%)
	Faculty degree	43(16.54%)
Marital status	Single	78(30%)
	Married	145(55.77%)
	Widow	8(3.08%)
	Divorced	29(11.15%)
Number of households		3.33±1.35
Number of children		1.32±1.00
Cigarette smoking	Yes	113(43.46%)
	No	147(56.54%)
Alcohol consummation	Yes	65(25%)
	No	195(75%)
Physical activity	Yes	145(55.77%)
	No	115(44.23%)
Diet	Regular meals	139(53.46%)
	Irregular meals	121(46.54%)

Table 2: Continued…

Economic status	Very good	18(6.92%)
	Good	212(81.54%)
	Bad	24(9.23%)
	Very bad	6(2.31%)
Working status	Work indefinitely	232(89.23%)
	Work on a specific	28(10.77%)
Years of service		17.81±11.90
Working environment	Intensive care	26(10%)
	Regular clinical condition	234(90%)
Work organization	Shift work	192(73.85%)
	Shift work and on-call work	21(8.08%)
	Single shift work	47(18.08%)
Contact with COVID-19 patients	Yes	239(91.92%)
	No	21(8.08%)
Protective equipment	Yes	246(94.62%)
	No	14(5.38%)

The average score, when quality of life was assessed were as follows - for the physical health was 33.35±2.94, for the mental health was 22.80±2.87, for the social relationships 12.28±2.00, and the environment was 28.69±4.87.

Measuring the depression anxiety stress, the mean value for the depression was 3.22±3.69, anxiety 3.18±3.41 and stress 5.65±3.78.

Assessing the fatigue, results were as follows – mean value for the physical aspect of fatigue was 12.31±3.25, the mental aspect of fatigue 10.51±3.16, and the general fatigue indicator 22.82±5.53.

Resilience had a mean value of 18.97±4.10, and caregiver burden was 43.52±12.32. More detailed results can be found within the Table 3.

Table 3: Average values of quality of life, depression anxiety, fatigue, burden and resilience

Variables	min-max	X±SD
WHOQOL-BREF		
Physical health	16-35	33.35±2.94
Mental health	11-30	22.80±2.87
Social relationships	3-18	12.28±2.00
Enviroment	14-41	28.69±4.87
Depression Anxiety Stress Scales - DASS-21		
Depression	0-20	3.22±3.69
Anxiety	0-17	3.18±3.41
Stress	0-18	5.65±3.78
Fatigue Assessment Scale – FAS Serbian		
Physical aspect of fatigue	2-23	12.31±3.25
Mental aspect of fatigue	4-24	10.51±3.16
Genderal fatigue indicators	9-46	22.82±5.53
Zarit Burden Interview		
Burden of care-givers	22-80	43.52±12.32
Brief Resilience Scale		
Resilience	8-31	18.97±4.10

On physical health as an aspect of quality of life, among socio-demographic characteristics, significant impact had - physical activity (*P*=0.046), proper nutrition (*P*=0.014), employment status (*P*=0.039) and financial condition of nurses (*P*=0.007). Also, depression (*P*=0.000), anxiety (*P*=0.006) and stress (*P*=0.000), physical (*P*=0.000), mental aspect (*P*=0.000) and general indicator of fatigue (*P*=0.000) and workload (*P*=0.000) have a negative impact on the physical health of nurses. Of the above variables, the greatest impact on mental health has physical aspect of fatigue.

On mental health as an aspect of quality of life, among socio-demographic characteristics, significant impact had - physical activity (r=0.001), employment status (r=0.004), marital status of caregivers (r=0.000), age of nurses (r=0.002) and years of work experience (r=0.004). Also, depression (r=0.000), anxiety (r=0.006) and stress (r=0.000), physical (r=0.007), mental aspect (r=0.000), general indicator of fatigue (r=0.000) and burden (r=0.000) have a negative impact on mental health of nurses, while resilience (r=0.035) has a positive impact. Of the above variables, the greatest impact on mental health of nurses have anxiety (r=0.017).

Social relationships as an aspect of quality of life were significantly influenced by socio-demographic characteristics such as protective equipment (r=0.014), education (r=0.001), age of nursing technicians (r=0.001), number of household members (r=0.001) and years of work experience (r=0.001). Also, depression (r=0.000), anxiety (r=0.006) and stress (r=0.000), physical (r=0.019), mental aspect (r=0.004), general indicator of fatigue (r=0.002) and burden (r=0.002) have a negative impact on caregivers' social relationships, while resilience (r=0.042) has a positive impact. Of the above variables, the largest impact on the social relationships of nursing technicians is the number of household members (r=0.001).

On the environment as an aspect of quality of life, socio-demographic characteristics had a significant impact on physical activity (r=0.012), proper nutrition (r=0.006), employment status (r=0.001), work with COVID patients (r=0005), marital status (r=0.003), financial situation (r=0.000), age of nursing technicians (r=0.000) and years of work experience (r=0.000). Also, depression (r=0.000), anxiety (r=0.000) and stress (r=0.000), physical (r=0.000), mental aspect (r=0.000), general indicator of fatigue (r=0.000) and burden (r=0.000) have a negative impact on the environment of nursing technicians, while resilience (r=0.038) has a positive impact. Of the above variables, the greatest impact on the social relationships of nursing technicians has caregiver burden (r=0.000).

To analyze the impact of depression, anxiety and stress, physical, mental aspects and general indicators of fatigue, resilience and burden of nurses on the quality of life, the method of linear correlation and regression was applied, i.e. the value of the Pearson correlation coefficient was interpreted. The results of this analysis are shown in Table 4.

Predictor models were created from variables that had a statistically significant impact on aspects of quality of life of nursing technicians and the standard multiple regression method was applied to determine which of the variables had the greatest impact on quality of life. The results of this analysis are shown in Table 5.

Table 4: Quality of life of nursing-tehnicians in relation to the scales of DASS-21, Fatigue, Resiliance scale and Zarit scale

Scale	Quality of Life			
	Physical Health	Physical Health	Physical Health	Physical Health
Depression	-0.221 0.000	-0.342 0.000	-0.284 0.000	-0.343 0.000
Anxiety	-0.169 0.006	-0.355 0.000	-0.242 0.000	-0.329 0.000
Stress	-0.246 0.000	-0.234 0.000	-0.230 0.000	-0.337 0.000
Physical aspect of fatigue	-0.274 0.000	-0.166 0.007	-0.145 0.019	-0.320 0.000
Mental aspect of fatigue	-0.244 0.000	-0.247 0.000	-0.179 0.004	-0.325 0.000
Genderal fatigue indicators	-0.300 0.000	-0.238 0.000	-0.187 0.002	-0.373 0.000
Resilience	0.114 0.065	0.131 0.035	0.126 0.042	0.129 0.038
Burden	-0.252 0.000	-0.253 0.000	-0.234 0.002	-0.472 0.000

Table 5: Results from standard multiple regression analysis

Quality of Life	Dependents variable	R square	Beta	*P*
Physical health	Physical aspect of fatigue	0.152	-0.154	0.036
Mental health	Anxiety	0.217	-0.240	0.017
Social relationships	Household number	0.186	0.194	0.001
Environment	Burden	0.375	-0.293	0.000

Discussion

Nurses are at high risk of fatigue due to stressful work environments with high workloads and non-standard work schedules. Fatigue is consistently associated with mental health problems, reduced nursing performance, and sick leave. Today, nurses face a variety of highly stressful work environments while meeting the physical and psychological needs of patients (20-22). Various factors can affect the quality of life of medical technicians (1). Insufficient staffing, inadequate working conditions, outdated equipment, shift work, and night work can reduce their quality of work and quality of life (8). Nurses are also often exposed to patient suffering and emotional stress, which can impair mental health and lead to compassion fatigue (14). The physical factor that has been shown to have the greatest impact on the quality of life of nurses caring for patients is musculoskeletal disorders, especially those affecting the lower back, shoulders, and neck. Studies have shown that 90% of nurses have low back pain (23, 24). Fatigue and sleep disturbances also affect quality of life, with one study reporting poor sleep quality in 73% of nurses and 90% experiencing severe fatigue associated with musculoskeletal pain, which has affected both the nurse's quality of life and patient safety (25, 26). Our study found that fatigue is the most important factor

affecting quality of life, while resilience is a protective factor. Since nurses are engaged in tasks such as lifting patients, working in awkward positions, or performing many repetitive movements, the physical component must be considered more carefully (27).

Recent studies have highlighted burnout as the most significant factor affecting the quality of life of nurses who provide care (28). Burnout causes emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, which ultimately leads to reduced job satisfaction (29). According to a recent systematic review, burnout was highly prevalent among nurses, and was associated with lower patient safety, increased errors, and reduced quality of life (28). The impact on mental health is very important, and it has been shown that nurses take an average of one week off work due to stress, anxiety, or depression, even more than due to illness (30, 31). According to our results, anxiety had the greatest impact on the mental aspect of quality of life of nurses, while resilience, in turn, was a protective factor. Many other factors are associated with the mental aspect of quality of life such as physical health, employment and marriage, age, along with depression, anxiety, stress and fatigue.

Some studies point out that social support is the most important social factor that can improve the quality of life of nurses who care (32). Support from colleagues, supervisors, friends and family plays a key role in increasing the psychological resilience of nurses (33). The correlation between a higher level of social support and a better quality of life has been established in many studies (34). According to our results, support from family members was the most influential factor affecting the social component of quality of life, while resilience was determined as a protective factor. As expected, anxiety, depression, stress, fatigue negatively affected the social part of quality of life.

Caregiving nurses have high levels of psychological distress, including anxiety, depression and emotional exhaustion, which is in line with our research (35). Financial concerns, like low wages and additional expenses for necessary resources add to the caregiving burden, which was also concluded in a few studies where caregiver nurses with lower economic status report a high level of burden (36).

Conclusion

Due to the specificity of the work of nurses who provide care, quality of life has become a very important aspect. Fatigue, stress, anxiety can have a cumulative effect and lead to burnout. More attention should be paid to this part of the working layer of the health system, which will increase its stability and reduce the potential long-term negative impact that can result in unsatisfactory quality of life. Implementing economic interventions, encouraging physical activity, supporting mental health, and promoting work-life balance can positively impact their quality of life.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of Interest

The authors declare that there is no conflict of interests.

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