

Factors Associated with the Quality of Life of the Nurses

Alma Lozančić ¹, Maja Miškulin ², Ivan Miškulin ², Mirjana Grebenar Čerkez ^{2,3}, Mato Matić ¹, Jelena Kovačević ^{1,2}, Vedrana Lanc Čurdinjaković ^{2,4}

¹ Institute of Emergency Medicine of the Vukovar-Srijem County, Vinkovci, Croatia

² Faculty of Medicine Osijek, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia

³ Clinical Hospital Center Osijek, Osijek, Croatia

⁴ Institute of Public Health of the Vukovar-Srijem County, Vinkovci, Croatia

*Corresponding author: Jelena Kovačević, dr.kovacevic.jelena@gmail.com

Abstract

Aim of the study: Research aim was to investigate the quality of life of the nurses and to determine sociodemographic factors associated with lower quality of life.

Methods: A convenience sample of 100 nurses from different medical institutions in Croatia was used. An anonymous on-line questionnaire containing sociodemographic questions was administered. Quality of life was measured using Short Form-36 (SF-36).

Results: Lower general health was associated with the older age of nurses and those working only morning shifts. Lower vitality and mental health were associated with working only morning shifts. Other investigated factors showed no association with the quality of life of the nurses.

Conclusion: The quality of life of the nurses is lower than the quality of life of the general population in Croatia, in domains related to the role limitations due to physical health, bodily pain, vitality and social functioning. Factors influencing the quality of life of the nurses are inconsistent with literature data and require further research.

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Introduction

Quality of life (QOL) is a concept referring to a general well-being of an individual, with regards to their goals, expectations, standards and living conditions. World Health Organization defines quality of life as one's perception of one's position in life in the context of the culture and value systems in which one lives (1). Health-related quality of life refers to the functioning and well-being within physical, mental and social dimensions of life (2). Many factors affect the quality of life of nurses and other health-care workers: age, gender, employment, profession, education, income, social support, marital status, work experience, position, department, shifts, workload (3–5), but the data are not consistent.

Nursing is one of four stressful professions in the world (6). Research has shown that healthcare professionals have lower QOL than other public sector personnel (5, 7) or general population (8, 9). Furthermore, nurses reported lower QOL than other health-care professionals, such as doctors and auxiliary personnel (7,8,10). QOL is an important tool for understanding the mental and physical health conditions of workers (11). For example, low physical domain of QOL was associated with lower working ability of emergency medicine employees (12). Lower QOL was also associated with high level of burnout and occupational stress in nurses (3, 8, 13). Furthermore, QOL can influence work efficiency, work quality, organizational commitment and job satisfaction in nurses (3).

The hypothesis of the research was that nurses have lower quality of life than general Croatian population and that sociodemographic factors are associated with the quality of life of the nurses. In the scope of continuous shortage of nursing professionals, data regarding the quality of life of the nurses and the factors associated with it could be valuable not only to the nurses but to the employers and a health-care system, since the nurses make the largest group of healthcare professionals in all countries (14) and management culture can improve the quality of life of the nurses (15). The research aim was to

investigate the quality of life of nurses and to determine sociodemographic factors associated with lower quality of life of nurses.

Material and methods

Research was conducted in Croatia in the April 2019 by using an online survey. Ethical Committee of the School of Medicine at University of Zagreb approved the research (Classification: 602-04/19-119/1; Number: 380-59-10703-19-6661). A convenience sample of 100 nurses from different medical institutions was used. The survey was anonymous and nurses interested in participating in the study were invited to fulfill a questionnaire online. The questionnaire was distributed via social networks and was limited to only one participation by using Google Forms. The questionnaire consisted of sociodemographic questions related to age, sex, education level, marital status, work place, working schedule, total length of service and the length of service in shifts. Quality of life was measured by using Short Form-36 (SF-36), which measures quality of life in eight domains: general health (GH), social functioning (SF), bodily pain (BP), mental health (MH), vitality (VT), role limitations due to emotional problems (RE), role limitations due to physical health (RP) and physical function (PF) (16). This self-reporting instrument is the most widely used scale for assessing the quality of life. It contains 36 items and the results are scored from 0 to 100 where higher scores present better quality of life. The SF-36 version in Croatian language was validated for Croatian population and it was found reliable (17).

Statistical analyses

The Kolmogorov-Smirnov test was used to test the data distribution normality. Descriptive statistics were applied. Comparison of numerical variables was done using the Mann-Whitney U test and the Kruskal-Wallis test. The statistical significance level was set at $p < 0.05$. The statistical package Statistica for Windows 2010 (version 10.0, StatSoft Inc., Tulsa, OK, USA) was used.

Results

Characteristics of the participants

The median age of the participants was 33.5 years (interquartile range 28.5–39.5), 79 (79%) were females. Educational level was as follows: 53% had finished secondary education, 34% were bachelors of nursing and 13% were masters of nursing. Working in the emergency departments was reported by 50% of the participants, while the other 50% worked outside emergency departments. The reported working shifts were as follows: working only morning shift was reported by 21% of participants; working in two day shifts (morning/afternoon) was reported by 30% of the nurses and 49% of the nurses reported working in three shifts including night shifts. Length of service in shifts was as follows: 41% of the participants reported working in shifts up to 5 years, 47% of the participants reported working in shifts for 6 to 15 years and 12% of the participants reported working in shifts longer than 15 years. Total length of service was as follows: 19% of the nurses reported working up to 5 years, 40% of the nurses reported working from 6 to 15 years, 24% of the nurses reported working from 16 to 25 years and 17% of the nurses reported working longer than 25 years in total. As for marital status, 12% were single, 63% were married, 9% were divorced, 16% were in a relationship and there were no widow(er)s (Table 1).

Table 1. Quality of life of nurses

QOL domains	Median	Interquartile range
PF	80.0	42.5–93.7
RP	50.0	6.25–100.0
RE	100.0	33.0–100.0
VT	50.0	40.0–60.0
MH	64.0	48.0–76.0
SF	62.0	50.0–75.0
BP	59.5	45.0–77.0
GH	55.0	45.0–75.0

Quality of life

The results of the quality of life are divided in eight domains and presented in Table 1. Factors found to be associated with lower QOL domains were older age group and working only morning shifts. Gender, work place, length of service in shifts, total length of service, educational level and marital status were not associated with difference in QOL domains. The oldest age group of the nurses had significantly lower scores in the QOL domain related to the general health. Nurses working only morning shifts had significantly lower scores in the QOL domains related to vitality, mental health and general health (Table 2).

Table 2. Sociodemographic factors associated with the quality of life of nurses

Sociodemographic factors	QOL domains							
	PF	RP	RE	VT	MH	SF	BP	GH
Gender	p=0.766*	p=0.877*	p=0.545*	p=0.763*	p=0.310*	p=0.431*	p=0.641*	p=0.696*
Age group	p=0.089 [†]	p=0.617 [†]	p=0.863 [†]	p=0.395 [†]	p=0.147 [†]	p=0.818 [†]	p=0.165 [†]	p=0.032[†]
Work place	p=0.482*	p=0.934*	p=0.779*	p=0.320*	p=0.663*	p=0.666*	p=0.669*	p=0.782*
Type of work shifts	p=0.260 [†]	p=0.159 [†]	p=0.659 [†]	p=0.009[†]	p=0.032[†]	p=0.379 [†]	p=0.435 [†]	p=0.044[†]
Length of service	p=0.212 [†]	p=0.861 [†]	p=0.674 [†]	p=0.549 [†]	p=0.080 [†]	p=0.368 [†]	p=0.383 [†]	p=0.988 [†]
Length of service in shifts	p=0.940 [†]	p=0.839 [†]	p=0.897 [†]	p=0.410 [†]	p=0.156 [†]	p=0.470 [†]	p=0.761 [†]	p=0.691 [†]
Educational level	p=0.147 [†]	p=0.177 [†]	p=0.061 [†]	p=0.180 [†]	p=0.724 [†]	p=0.764 [†]	p=0.521 [†]	p=0.694 [†]
Marital status	p=0.718*	p=0.456*	p=0.874*	p=0.799*	p=0.550*	p=0.843*	p=0.736*	p=0.073*

*Mann-Whitney U test; [†]Kruskal-Wallis test

Discussion

The study investigated the QOL of the nurses and sociodemographic factors that might be associated with it. Comparison of the results with the Croatian general population norms for SF-36 (17) showed nurses to have lower QOL of life in the following domains: RP, BP, VT and SF. The obtained results were higher than the Croatian general population scores for the following domains: PF, RE and MH, whereas they were similar for GH domain. Other QOL studies also found nurses to have lower QOL than general population of the country (7, 9, 10). Nurses in Italy had significantly lower QOL scores compared to Italian general population in the following domains: GH, VT, SF, RP, BP (9). Moreover, the nurses in Greece had lower QOL scores than the Greek general population (7).

Results from this study across five QOL domains (GH, RP, BP, VT, PF) were lower than the QOL scores obtained in 2019 for Italian nurses working night shifts (9) even though our sample included nurses working all kinds of shifts. The MH and SF domains were similar, while RE was higher in our study. Lower QOL domain scores indicated poorer physical health of nurses from Croatia than those in Italy. A study of Iranian nurses from 2022 showed better results than our study results for several domains: RP, BP, GH, VT; lower results for SF, RE, MH, and similar result for PF, also indicating that nurses from Croatia had poorer physical health than their colleges in Iran during the COVID-19 pandemic (6).

This study showed poorer general health to be associated with older age and working only morning shifts, while sex, work place, total length of service, length of service in shifts, educational level and marital status showed no association with general health. The Italian study obtained the opposite results, showing poorer general health in nurses working night shifts, those having longer length of service and in female nurses (9). Lower general health scores in the oldest age group of nurses are in congruence with the general fact that the quality of life decreases with age, and similar results

were obtained for Croatian general population (17).

Lower vitality was associated with working only morning shifts in this study, while other factors showed no association with this domain. On the contrary, the Italian study showed that lower vitality was associated with the total years of service and the female gender (9). Poorer mental health was associated with working only morning shifts. Another study of Croatian clinical nurses found no association between the psychological health domain and shift work, gender or work experience (14), while the Italian study found lower mental health to be associated with female gender (9). The Lebanese study also found female nurses and those with lower education level to have lower psychological domain of the QOL (13). This study found no association between the investigated sociodemographic factors and physical function. Another study of Croatian clinical nurses also found no association between physical health domain and shift work, gender or work experience, but found association between physical health domain and lower education level (14), while the Italian study found association between physical function and female gender, longer length of service, longer service in shifts, longer time spent working in the same unit and older age (9). The Lebanese study also found female nurses, older nurses and those with longer length of service to have lower physical domain of the QOL (13). Role limitations due to physical health was not associated with the investigated sociodemographic factors in this study, while the Italian study found association with female gender (9). Bodily pain was not associated with the investigated sociodemographic factors, whereas the Italian study found association with marital status, gender, number of children, length of service, length of service in shifts, length of work in the same unit and age (9). Role limitations due to emotional problems was not associated with the investigated sociodemographic factors, while the Italian study found association with longer length of service in the same unit (9). Social functioning was not associated with the investigated sociodemographic factors. Another

study of Croatian clinical nurses found no association between the social interaction domain and shift work, gender or work experience, but found association between the social interaction domain and older age and being single (14), while the Italian study found association between social functioning and female gender, length of shift work and length of work in the same unit (9). The Lebanese study found the social relationship domain of the QOL to be lower in females, nurses working night shifts and those with longer length of service (13).

Literature data, including this study, indicate that factors influencing the quality of life of nurses are inconsistent and differ across the countries. Although gender was not associated with any of the QOL domains in this study, other studies found lower quality of life of female nurses (3, 6, 9, 13). A study of Chinese surgical nurses showed association between lower QOL and female sex, younger age, frequent night shifts and professional titles, which is contrary to our results, and found no association with length of service, education level, marital status and ethnicity, which is similar to our results (3). A study of Iranian nurses found association between lower QOL and female gender, being single, lower income, which is contrary to our results, and found no association with education level, which is similar to this study (6). A study of Italian nurses working night shifts found lower QOL to be related to female gender and longer commuting (9). Lebanese study of the QOL of nurses found lower education level, female gender, length of service, shift work and older age to be associated with lower QOL, while marital status and monthly income showed no association with the QOL (13). QOL was associated with age, marital status, education, work experience, position, department, shifts and employment status in Iranian nurses (4).

Several studies reported negative effects of shift work and night shifts on health (18). Shift work is the main characteristic of nursing and was found to be associated with sleep, digestive and cardiovascular disorders (14) and also with compassion fatigue and burnout (19). Shift work may worsen the quality of life (3,9), but this study did not confirm these results. The highest scores

of the QOL in this study reported nurses that work in day shifts (morning/afternoon), and the worst scores of QOL reported nurses working only morning shifts. Nurses that work both day and night shifts had better QOL scores than nurses working only morning shifts. The reason for different results in different studies may reflect the work dynamics at different positions or departments. For example, nurses in Croatia working night shifts in prehospital emergency medical service may get several hours of sleep during the shift if there are no new patients to attend throughout the shift, while in some other departments during the whole night shift there is no opportunity to rest.

In this study, as well as in others, age was associated with lower quality of life (4, 13). Other factors that may influence the QOL of nurses and that should be investigated in the future include those related to working during COVID-19. Some studies already found COVID-19 anxiety to be associated with lower QOL of nurses (6).

Female nurses comprised the most of the study sample, which is representative of the nursing profession, given that it is considered to be a female profession (19). Other studies that we compared our results with also had their study samples mostly consisting of female nurses (3, 6, 7, 9, 13, 14, 19).

Most of the reference studies of the QOL of nurses used the same SF-36_{v2}, while others used other available QOL instruments (4, 13, 14, 19). Therefore, data from this study are mostly comparable within the aspect of methodology.

Limitations of the study

This study has several limitations that need to be addressed. A convenience sample was used, which can cause selection bias and limit the potential to generalize the results. The cross-sectional study type cannot prove causality between the investigated variables. The use of self-reported questionnaires could be associated with the social desirability bias and the study sample was relatively small so it may not be representative of Croatian nurses. The use of an online survey probably implies

younger population of nurses that are more familiar with the use of internet, which is supported by relatively young median age of the participants. Further research should also use conventional channels for the collection of the study sample in addition to the online survey methods, which could enable participation of all age groups of nurses. Moreover, the reference scores for Croatian general population are from 2006 (17) and those might have changed over the years.

In conclusion, the quality of life of nurses is lower than the quality of life of general population in Croatia, in domains related to the role limitations due to physical health, bodily pain, vitality and social functioning. Data regarding factors influencing the quality of life of the nurses are inconsistent with literature data and require

further investigation. Further research needs to be directed toward broadening the spectrum of investigated factors that may influence the quality of life of nurses and determining causality between them, possibly on the greater sample of nurses from different health-care departments. Changes in quality of life before, during and after the COVID-19 pandemic should also be evaluated since nurses and other health-care professionals carry the heaviest burden of the COVID-19 pandemic.

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Author contribution. Acquisition of data: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Administrative, technical or logistic support: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Analysis and interpretation of data: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ,
Conception and design: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Critical revision of the article for important intellectual content: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Drafting of the article: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Final approval of the article: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Provision of study materials or patients: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ
Statistical expertise: AL, M. Miškulin, IM, MGČ, M. Matic, JK, VLČ

Čimbenici povezani s kvalitetom života medicinskih sestara

Cilj istraživanja: Cilj istraživanja bio je ispitati kvalitetu života medicinskih sestara i utvrditi sociodemografske čimbenike povezane s nižom kvalitetom života.

Metode: Korišten je prigodni uzorak od 100 medicinskih sestara iz različitih medicinskih ustanova u Hrvatskoj. Proveden je anonimni on-line upitnik koji je sadržavao sociodemografska pitanja. Kvaliteta života mjerena je pomoću Upitnika za procjenu zdravstvenog stanja - 36 (SF-36, od engl. Short form - 36).

Rezultati: Lošije opće zdravlje povezano je sa starijom dobi medicinskih sestara i radom samo u jutarnjim smjenama. Niža vitalnost i mentalno zdravlje povezani su s radom samo u jutarnjim smjenama. Ostali ispitivani čimbenici nisu pokazali povezanost s kvalitetom života medicinskih sestara.

Zaključak: Kvaliteta života medicinskih sestara niža je od kvalitete života opće populacije u Hrvatskoj, u domenama koje se odnose na ograničenja uloga zbog tjelesnog zdravlja, bol, vitalnost i socijalno funkcioniranje. Čimbenici koji utječu na kvalitetu života medicinskih sestara nisu u skladu s podacima iz literature i zahtijevaju daljnja istraživanja.