

The Quality of life of graduate nursing students in Croatia: a cross-sectional study

Kvaliteta života studenata diplomskog studija sestrinstva u Hrvatskoj: presječna studija

Marta Čivljak¹, Tea Vukušić Rukavina², Slavica Sović², Lovela Machala Poplašen², Milan Milošević², Stjepan Orešković²

¹ Catholic University of Croatia, Ilica 242, 10 000 Zagreb, Croatia

² University of Zagreb School of Medicine, Andrija Štampar School of Public Health, Rockefellerova 4, 10 000 Zagreb, Croatia

Abstract

Objective: The objective was to assess the quality of life (QoL) of graduate nursing students enrolled in the University of Zagreb, School of Medicine, and evaluate the relationship between QoL and marital status, age group and work setting.

Method: A cross-sectional study was conducted in 2012–2013 among 154 nursing professionals/technicians from the University of Zagreb School of Medicine, Croatia, using the WHOQOL-BREF Questionnaire.

Results: The majority of the participants (88.3%) were female, with a median age of 39.0 years (interquartile range, IQR = 31.1–45.2). More than 90% of the participants had already completed university studies. Marital status, age group, or work setting made no significant impact on the scoring of the four QoL domains (physical, psychological, environmental, and social relationships). Significantly lower median values in the psychological domain were noted in the group between 25 and 45 years of age ($p = 0.010$).

Conclusion: Perceptions of QoL might be directly related to the educational levels of the participants since according to the latest knowledge, nurses who are university-educated have better work ability. Providing educational and career prospects can contribute to decreasing nurses' occupational stress levels and increasing their work ability. Other determinants of QoL not addressed in this paper should be investigated.

Keywords: Quality of Life, nursing, education, nursing students, Croatia

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Sažetak

Cilj: Cilj provedenog istraživanja bio je ocijeniti kvalitetu života studenata diplomskog sestrinskog studija pri Medicinskom fakultetu Sveučilišta u Zagrebu te procijeniti odnos kvalitete života i bračnog statusa, dobne skupine i radnog okruženja.

Metode: Kvaliteta života studenata sestrinstva anonimno je ispitana korištenjem upitnika Svjetske zdravstvene organizacije WHOQOL-BREF, kojim su ispitane četiri domene kvalitete života (domene tjelesnog i psihičkog zdravlja, socijalnih odnosa i okoline). Provedena je presječna studija u razdoblju od 2012. do 2013. godine među 154 medicinskih sestara i tehničara, studenata diplomskog studija sestrinstva Medicinskog fakulteta u Zagrebu.

Rezultati: Većina je sudionika (88,3 %) ženskog spola s medijanom od 39 godina (interkvartilni raspon, IQR = 31,1 – 45,2). Više od 90 % sudionika već je prije završilo neki oblik formalne edukacije na visokoškolskoj razini. Istraživanjem nije utvrđen značajan utjecaj na ocjenu četiriju domena kvalitete života u odnosu na bračni status, dobnu skupinu ili radno okruženje. U dobnoj skupini 25 – 45 godina zabilježene su značajno niže vrijednosti medijana ($p = 0,010$) u psihološkoj domeni.

Zaključak: Postoji mogućnost da je percepcija kvalitete života bila izravno povezana s obrazovnim razinama sudionika jer, prema dosadašnjim saznanjima, medicinske sestre koje su završile edukaciju na visokoškolskoj razini imaju bolju radnu sposobnost i kvalitetu života te drugačiji pristup i razmišljanje u domena koje ispituju kvalitetu života. Pružanje mogućnosti izobrazbe i napretka u radnom okruženju može doprinijeti smanjenju stope profesionalnog stresa medicinskih sestara te povećati njihove radne sposobnosti. Druge domene QoL koje nisu navedene u ovom radu trebale bi se istražiti.

Ključne riječi: Kvaliteta života, sestrinstvo, edukacija, studenti sestrinstva, Hrvatska

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Autor za korespondenciju/Corresponding author: Lovela Machala Poplašen, MA; University of Zagreb School of Medicine, Andrija Štampar School of Public Health, Rockefellererova 4, 10 000 Zagreb, Croatia, e-mail: lmachala@snz.hr, Tel: +385 91 8860748

Introduction

The World Health Organization (WHO) has long acknowledged the crucial contribution of nurses and midwives to improving the health outcomes of individuals, families and

communities [1]. Nevertheless, nursing is still a highly gender-segregated profession. Nurses are the single largest group of health care providers in the world (80%) and are in close to the delivery of care [1, 2].

In the year 2012, there were 24.262 practising nurses in the health care system in the Republic of Croatia, of whom 82% (19.874) had a secondary (high-school) education and 18% (4.388) nurses with a bacca-laureate and master of nursing university degrees. Also, 5.881 nurses were working with a non-permanent contract [3].

In 2017, the Croatian Chamber of Nurses has 37.412 registered nurses [4] with various educational backgrounds. Of this number, more than 95% are licensed to work independently [3, 5]. Nurses in Croatia generally represent up to 61% of the employees in health care [3, 5]. The number of nurses per 100.000 population compared to 1980 has been increasing every year. In 2010, there were 566 nurses per 100.000 population, which is still lower than the EU average (782/100.000) [5, 6]. Despite a shortage of nurses in the system, a large number of nurses are unemployed. According to the data from the Croatian Employment Service, there were 2.172 unemployed nurses in 2013 [5].

The Republic of Croatia has a long tradition in the development of nursing education. Before joining the European Union in 2013 only the curriculum of three-year vocational and specialist studies nurses were compatible with the Sector directives of the EU [7, 8]. A program for bridging the competency gap of the previous secondary education programs in nursing with Directive 2005/36/EC of the European Parliament and the Council was introduced on 7 September 2005 [9]. Nursing education in Croatia has been harmonized with the Bologna Process at the undergraduate and graduate levels, and many working nurses with undergraduate degrees have enrolled in graduate studies [8]. Nursing education in Croatia is neither regulated nor harmonized with the requirements of the health care system. However, the training of nurses has undergone significant changes [10]. Graduate nursing studies were introduced in 2011 at the University of Zagreb School of Medicine. Similar curricula have also been organized in other Croatian centers. These educational reforms have resulted in an increased number of qualified nurses and improved training. The objective of graduate university studies is to train students for teamwork, project planning processes, decision-making, management and teaching [11].

Graduate studies are a prerequisite for postgraduate doctoral studies at the university level in the fields of health sciences and biomedicine, thereby furthering the advancement of the nursing profession. Nursing education reforms have enabled nurses who have worked in the profession for years to further their education.

Most nurses are women, so the quality of life of this group of health care workers is particularly vulnerable [12-14]. Although attitudes about gender roles are changing, women are still primarily responsible for the home and children and, therefore, have to balance the demands of their family and work roles [15]. Long work hours and the relative absence of organized family life combine to create conflict between family responsibilities and schoolwork. Training is one of the factors that make nurses' lives harder and impact their quality of life. The conflicting demands of jobs, families, and school create conflict, which affects not only their academic performance but also their social interactions, competence and well-being [16].

Quality of life is a term used by various segments of society to cover subjective and objective aspects and refers to the human need to seek internal and external equilibrium [17]. The WHO defines QoL as "an individual's perceptions of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" [18]. This definition reflects the view that quality of life refers to a subjective evaluation, which is embedded in the cultural, social and environmental context.

A previous study on undergraduate nursing students found that 44.4% of them claimed that their fatigue was related to the demanding nursing curriculum, including their high workload, an excessive number of exams, and long classroom hours [19], thus indicating a relationship between QoL and the work setting during the period of university education. Higher education improves the quality of life in terms of professional development, work ability, and decision-making regarding health choices. The quality of work-life has a major impact on attracting and retaining nurses [20].

The objective was to assess the quality of life of nursing students in Croatia and evaluate the relationship among the quality of life domains of marital status, age group and work setting.

Subjects and methods

During the period from 2011 to 2013, 198 graduate students from different parts of Croatia were enrolled in nursing studies at the University of Zagreb. This is a descriptive and cross-sectional study involving 154 graduate nursing students attending the University of Zagreb School of Medicine, which was conducted during 2012-2013. First-year graduate nursing students were approached during a Medical Sociology class and invited to complete a printed version of the World Health Organization's Quality of Life-BREF Questionnaire (WHOQOL-BREF). After they were introduced to the objectives of the study and assured that the researchers would respect the anonymity and confidentiality of their responses, they voluntarily agreed to participate. Students in the first year of study so-called first generation (February 2012), second generation (May 2012) and third generation (January 2013) of nursing studies were recruited.

The WHOQOL was initially developed for three purposes: (A) to extend the dimensions of health measurement beyond traditional health indicators, (B) to develop a universal instrument for assessing the quality of life cross-culturally, and (C) to assess humanistic elements to promote a holistic approach to health and health care [16].

The WHOQOL-100 assessment was developed by the WHOQOL Group, with 15 international field centers [21, 22]. Later, the brief version (WHOQOL-BREF) was developed and introduced in the English language, translated into other languages, validated internationally and widely used in a variety of cultures [23-25]. The version in the Croatian language is an acceptably reliable instrument for quality of life assessment [26]. This version contains 26 items or facets, 24 items corresponding to the four domains related to the

perception of the quality of life and 2 items that are separately examined and specifically correspond to the individual's perception of the general quality of life and health-related quality of life. The four domains assessed are physical (pain, energy, fatigue, mobility, activities, medication and work), psychological (positive feelings, cognition, esteem, body, negative feelings and spirituality), social relationships (social relationships, social support and sexuality) and environmental (security, home, finances, services, information, leisure, environment and transport). As suggested by the WHOQOL Group, the general quality of life and health-related quality of life (Questions 1 and 2 of the WHOQOL-BREF instrument) were analyzed independently. The scores of the domains are ranked on an ascending scale (range from 1; the lowest value to 5; as the highest value), with higher scores indicating a better quality of life. There are also 3 items with response options listed in a negative direction: 1) "To what extent do you feel that physical pain prevents you from doing what you need to do?" 2) "How much do you need any medical treatment to function in your daily life?" and 3) "How often do you have negative feelings, such as blue mood, despair, anxiety, depression?" The reference time for the personal perception of the different items was four weeks.

The second part of the questionnaire contained questions that explored sociodemographic variables that could influence the quality of life of the graduate nursing students included in the study: gender, age, level of education, marital status, and services performed in the work setting. According to the services performed, the nurses were divided into two groups. In the first group were graduate nursing students working in intensive care or emergency medicine units. In the second group were graduate nursing students working in hospital units other than intensive care or emergency medicine, as well as those performing other services (working in primary care or teaching at a secondary nursing school). The division of the students into two groups was based on the assumption that nurses who work in hospitals are subjected to a greater [27, 28].

We used partial correlations to compensate for the multivariate effect on the correlation coefficients between the general and health-related QoL and WHOQOL domains.

The Kolmogorov-Smirnov test was used to assess data distribution and, according to the results, appropriate non-parametric tests were performed during the analyses. The differences between the two independent groups were analyzed with the Mann-Whitney U test. The Kruskal-Wallis test was used to assess the differences among three or more groups. All P values below 0.05 were considered significant. The statistical package IBM SPSS Statistics, Version 21, was used in all the statistical procedures.

Results

There were 154 participants included in the study, with a response rate of 77.8%, of whom 136 were women (88.3%). The median age of the nurses was 39.0 (interquartile range, IQR = 31.1–45.2). Most of the participants, 143 (92.9%) had previously completed educational programs, such as nursing studies at a three-year vocational school and specialist

studies, and may have also acquired practical experience at health care institutions. Consequently, all participants included in this study have a high level of education. Only 11 (7.1%) of the participants had no practical experience in health institutions because they had continued their nursing education at the University of Zagreb immediately after completing their previous schooling. Most of the students, 119 (77.3%), lived with their partners. Others had no partner, and either lived alone or were divorced, and one was a widow.

As to the QoL, there was no difference in the scoring of the four domains. Nurses' QoL according to the median score (interquartile range) in the physical domain was 57.14 (50 to 64.29), in the psychological domain was 66.67 (58.33 to 75), in the social relationship domain was 75 (66.67 to 83.33), in the environmental domain was 68.75 (59.38 to 75), and the global quality of life and health-related quality of life share same median score of 4 (3 to 4). As suggested by the WHOQOL Group, general quality of life and health-related quality of life (Questions 1 and 2 of the WHOQOL-BREF instrument) were analyzed independently. There were no differences among the assessments of the general quality of life, as the median score was 4.

Table 1 presents the perceptions of each of the QoL domains in relation to the variable of the nurses' marital status.

When relating the QoL with the variable of marital status, there were no differences among any of the four domains (**Table 2**).

When correlating QoL with the age variable, there were significant differences in the psychological domain ($P = 0.010$). Lower median domain values were noted in the group between 25 and 45 years of age. With respect to QoL and whether the nurses worked in intensive care/emergency medicine units, other hospital units or elsewhere, we found no significant differences (**Table 3**).

Regarding educational background, most of the participants had an undergraduate degree in nursing and practical work experience, except for 11 participants who had no work experience because they had continued their studies immediately upon completing their previous schooling. As shown in **Table 4**, when controlled for age, gender, educational level, marital status and workplace, all the WHOQOL domains significantly positively correlated with the global QoL and health-related QoL. The highest positive correlation coefficient in both comparisons was with the WHOQOL environmental domain ($r = 0.586$; $P < 0.001$ and $r = 0.407$; $P < 0.001$, respectively).

Discussion

This study has shown that graduate nursing students were satisfied with their health status and general quality of life, with a median score of 4.

The highest positive correlation coefficient with global QoL and health-related QoL was with WHOQOL environmental domain which indicates that environmental factors are important for improving global and health-related QoL among nurses (**Table 4**).

TABLE [1] Nurses' QoL according to Marital Status

Domains	Living with partner			P
	Answer = N	Median	IQR	
Physical domain	No=33	53.57	46.43-60.71	P=0.252
	Yes=119	57.14	50-64.29	
Psychological domain	No=33	66.67	58.33-75	P=0.279
	Yes=119	66.67	62.50-75	
Social relationship domain	No=33	75	66.67-83.33	P=0.276
	Yes=119	75	66.67-83.33	
Environmental domain	No=33	65.63	56.25-75	P=0.616
	Yes=119	68.75	59.38-75	
Global quality of life	No=33	4	3-4	P=0.269
	Yes=119	4	3-4	
Health-related quality of life	No=33	4	4-4	P=0.906
	Yes=119	4	4-4	

*QoL=Quality of Life; N=sample size; P=analyzed with Mann-Whitney U test; IQR=interquartile range percentile 25. to 75.

TABLE [2] Nurses' QoL according to Age Groups

Domains	Age groups			P
	n	Median	IQR	
Physical	<25	18	60.71	P=0.066
	25-35	33	53.57	
	35-45	59	57.14	
	>45	37	60.71	
Psychological	<25	18	70.83	P=0.010
	25-35	33	66.67	
	35-45	59	66.67	
	>45	37	70.83	
Social relationship	<25	18	83.33	P=0.215
	25-35	33	66.67	
	35-45	59	75	
	>45	37	75	
Environmental	<25	18	68.75	P=0.444
	25-35	33	65.63	
	35-45	59	68.75	
	>45	37	68.75	
Global quality of life	<25	18	4	P=0.134
	25-35	33	4	
	35-45	59	4	
	>45	37	4	
Health-related quality of life	<25	18	4	P=0.494
	25-35	33	4.00	
	35-45	59	4.00	
	>45	37	4.00	

*QoL=Quality of Life; all results presents as % of n; n=sample size; P=analyzed with Kruskal-Wallis test; IQR=interquartile range percentile 25. to 75.

TABLE [3] Domains of Nurses' QoL according to Service Performed

Domains	ER and intensive care units			P
	Answer= N	Median	IQR	
Physical	Not working in the ER=118	57.14	50-64.29	P=0.757
	Working in the ER=36	60.71	50-62.50	
Psychological	Not working in the ER =118	66.67	58.33-75	P=0.554
	Working in the ER =36	68.75	60.42-79.17	
Social relationship	Not working in the ER =118	75	66.67-83.33	P=0.248
	Working in the ER =36	75	75-83.33	
Environmental	Not working in the ER =118	68.75	59.38-75	P=0.258
	Working in the ER =36	67.19	56.25-73.44	
Global quality of life	Not working in the ER =118	4	3-4	P=0.409
	Working in the ER =36	4	3-4	
Health-related quality of life	Not working in the ER =118	4	3-4	P=0.828
	Working in the ER =36	4	4-4	

*QoL=Quality of Life; N=sample size; ER=Emergency Room; P=analyzed with Mann-Whitney U test; IQR=interquartile range percentile 25. to 75.

TABLE [4] Partial Correlations between General and Health-Related QoL and WHOQOL Domains Controlled for Age, Gender, Educational Level, Marital Status and Workplace

Domains	Partial Correlations	Global quality of life	Health-related quality of life
WHOQOL: physical	Correlation coefficient	0,550	0,208
	P	<0,001	0,013
	df	139	139
WHOQOL: psychological	Correlation coefficient	0,521	0,339
	P	<0,001	<0,001
	df	139	139
WHOQOL: social relationship	Correlation coefficient	0,448	0,287
	P	<0,001	0,001
	df	139	139
WHOQOL: environmental	Correlation coefficient	0,586	0,407
	P	<0,001	<0,001
	df	139	139

*QoL=Quality of Life; WHOQOL= quality of life assessment developed by the World Health Organization Quality of Life Group; P <0,001= lower significane level; df= degrees of freedom

This also confirms findings in previous studies regarding linking global QoL and the impact of environmental factors [29].

There were no differences in the evaluations of the four domains of quality of life and the mean scores were 75. Bearing in mind our participants' obligations toward work, family, lectures and exams, we were expecting the physical domain to be scored lower than the other domains. However, no difference was found, even when the quality of life was analyzed according to the work setting. Significant differ-

ences in the psychological domain were only in relation to the ages of the study participants. The median domain values in the age group between 25 and 45 years were lower.

There were also no differences among the assessments of the health-related quality of life domain, where a median score of 4 (IQR 3-4) was again obtained. This indicated that the nurses included in the study were satisfied with their health status.

Nursing is a unique activity, which has gradually established itself in Croatia as a profession involving interdisci-

plinary and multidisciplinary knowledge with specialized activities [6]. Students have various expectations from their education. Nurses are motivated to study in order to improve their knowledge, patient care, professional relations, and clinical competence, but also for the pleasure of learning [30].

The study population was predominated by women (88.3%), as to be expected because nursing is considered suitable work for women in Croatia, as in other countries, due to sociocultural factors [31-33].

Since the study population was predominantly women, conclusions based on gender differences or similarities in the observed parameters cannot be made. There was a preponderance of nurses living with a partner (77.3%), as found in other studies [26, 28, 34].

Shift work has been shown to have negative effects on physical health, sleep quality and mental health [31-33, 35]. However, our findings did not indicate a difference in the quality of life among participants working in such settings, as consistent with previous studies [28, 29, 36-39].

Golubić et al. have concluded that nurses with only secondary school qualifications perceive workplace hazards and shift work as statistically significantly more stressful than do nurses with a college degree [39]. They also concluded that nurses with a higher level of education have better work ability than their colleagues with lower levels of education [39]. Sorić et al. found that a higher education level predicts a good level of work ability, good physical health domain and good environmental domain of the QoL [40]. Since participants in this study were all educated, this may be a factor in the perception of the quality of life among our participants.

There have been several studies conducted in Croatia to assess work-related stress, work ability, the conflict between work and family roles, shift work and quality of life among hospital nurses [26, 28, 29, 31, 39, 40]. To the best of our knowledge, this is the first cross-sectional study about the quality of life among undergraduate and graduate nursing students in general.

However, the present study has several limitations, as follows. Firstly, the findings are restricted to nurses studying at the University of Zagreb and cannot be generalized to other settings. Secondly, although the response rate was relatively high, no conclusion can be drawn regarding the nurses who did not participate in the study. No assumptions can be made as to whether the non-respondents had a better or worse QoL compared to the respondents. Thirdly, our results relied on only a few sociodemographic variables, which were assumed to affect the participants' QoL, taking into account that students are a healthy and very active population. Further research in this area is needed.

Conclusion

Environmental interventions are important for improving global and health-related QoL among nurses. Health promotion programs aimed to improve lifestyles and, consequently, health, work capacity and work productivity

should be developed. We suggest that increasingly higher levels of education lead to changes in thinking and decision-making patterns that affect QoL. Providing educational and career prospects can contribute to better QoL and decrease nurses' occupational stress levels, thus improving their work ability.

Conflict of interest:

Authors declare no conflict of interest

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