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QUALITY OF LIFE AMONG HOSPITAL NURSING PERSONNEL IN PROVINCE: A CROSS-SECTIONAL STUDY

Andrianna Maria Stamou, Georgia Gerogianni, Victoria Alikari, Angeliki Stamou, Dimos Mastrogiannis, Andriana Maggita, Georgios Vasilopoulos

Postgraduate Program (MSc) "Applied Clinical Nursing", Department of Nursing University of West Attica

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Abstract

Introduction: Quality of life (QoL) is a multidimensional concept encompassing physical, psychological, social, and cognitive well-being and is recognized as an indicator of population health. Nurses are exposed to demanding working conditions and multiple occupational stressors that may negatively affect their QoL. Since nurses' well-being is closely linked to the quality of patient care, assessing their QoL is of particular importance. Therefore, the aim of the present study was to investigate QoL of nursing personnel employed at a hospital in a provincial town.

Material and Methods: Data were collected using the Greek version of the SF-12 health survey which includes a Physical Component Summary score (PCS) and a Mental Component Summary score (MCS). Also were recorded participants' characteristics.

Results: Among the 120 participants, women predominated (86.7%), while the largest proportion of participants were aged 41–45 years (25.0%). The mean PCS-12 score was 44.6 (SD=9.2) and the mean MCS-12 score was 46.0 (SD=9.6), with median values of 44.8 (IQR:37.2–53.1) and 46.9 (IQR:40.0–53.8), respectively. In univariate analyses, higher PCS score was associated with younger age ($p=0.043$), being single/divorced ($p=0.041$), having no children ($p=0.008$). Higher MCS score was associated with male sex ($p=0.020$) and having siblings ($p=0.001$).

Conclusions: Demographic and family-related characteristics, including age, marital status, parenthood, sex, and sibling status, were associated with variations in perceived well-being. These findings highlight the importance of implementing targeted workplace strategies and support interventions to promote nurses' QoL and maintain a healthy nursing workforce.

Keywords: SF-12, PCS-12, MCS-12, quality of life, nurses

Corresponding author: Andrianna Maria Stamou, e-mail: acn23016@uniwa.gr

1. INTRODUCTION

The concept of quality of life (QoL) was initially developed to assess individuals' physical, psychological, and social well-being. The assessment of QoL is increasingly regarded as a key component in both clinical practice and community health decision-making, as it provides valuable insights into population health status and overall well-being.¹⁻³

More in detail, QoL refers to an individual's subjective evaluation of how health status affects multiple areas of everyday functioning and overall life experience. This concept is inherently multidimensional, as it incorporates several interrelated domains, including physical capacity (mobility, fatigue, pain), psychological status (anxiety, depressive symptoms), social relationships, perceived social support, and cognitive performance (attention, memory, concentration). These dimensions shape an individual's overall well-being and play a crucial role in determining their ability to perform daily activities, maintain social relationships, and participate effectively in occupational roles.³

Nurses represent a cornerstone of healthcare delivery systems. Their routine clinical practice and working conditions exert a substantial influence on their overall health status, potentially predisposing them to both physical and psychological morbidity. The demanding nature of nursing work, frequently characterized by rotating shifts across multiple clinical departments, exposes nurses to a variety of occupational hazards, including chemical and biological agents, physical injury risks, and psychosocial stressors such as burnout, depressive symptoms, and occupational stress.²⁻⁶ Moreover, inadequate staffing levels, limited managerial support, and insufficient availability of essential resources further exacerbate work-related strain and increase the likelihood of occupational health impairments. Furthermore, extended working hours and chronic fatigue have been linked to the adoption of adverse health behaviors, such as tobacco use and decreased engagement in physical activity and exercise.⁷

The importance of nurses' well-being is widely acknowledged, given its direct influence on patient care outcomes. In particular, suboptimal health status among nursing staff can adversely affect both the quality and safety of care delivery. Furthermore, impaired health among nurses has been linked to a higher incidence of medication errors, higher absenteeism, and poor workplace relationships. Indeed, nurses deliver high-quality patient care when they maintain good health and an adequate quality of life.^{1,2,8}

Therefore, greater attention should be directed toward the QoL of nursing professionals. Systematic assessment of nurses' health QoL supports the development of policies aimed at promoting and maintaining a healthy working environment.

The aim of the present study was to explore QoL among nurses working in a provincial hospital.

2. MATERIALS AND METHODS

2.1 Design, Setting, and Period of the Study

In this cross-sectional and single-center study, 120 nursing personnel working in a public hospital in a provincial town were recruited between November 2024 and February 2025. For participants' selection was used convenience sampling.

2.2 Inclusion and exclusion criteria

The inclusion criteria for participants were: (a) age over 25 years, (b) ability to understand the Greek language and (c) employment as nursing staff. The exclusion criteria were working less than one year.

2.3 Data collection procedure

For the collection of data was used a self-administered questionnaire and its completion took approximately 20–25 minutes and was performed during non-clinical time, when participants were not involved in care activities. All eligible nurses who agreed to participate during the study period were invited.

2.4 Research Instrument

In the present study, the SF-12 Health Survey (Short Form-12) was used to assess QoL. Demographic and occupational characteristics were also recorded.

2.4.1 Assessment of QoL

The SF-12 questionnaire (Short Form-12 Health Survey) is a brief, generic instrument for the assessment of QoL and was developed as a concise version of the widely used Short Form Health Survey – 36 items (SF-36). It was designed to reduce respondent burden while maintaining an adequate level of accuracy and validity in the assessment of physical and mental health. The SF-12 consists of 12 items that cover eight core health dimensions: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. Responses to the items are combined using a specific weighted scoring algorithm to calculate two summary indices: The Physical Component Summary (PCS-12) and the Mental Component Summary (MCS-12). Scoring is based on norm-based scoring, according to which the indices are standardized to have a mean of 50 and a standard deviation of 10. Higher scores indicate better perceived health status, whereas scores below 50 indicate poorer health compared with the general reference population. The use of norm-based scoring allows comparisons across different populations and studies, as well as longitudinal monitoring of health status. The SF-12 has been widely used in both clinical and general populations, as well as in epidemiological and interventional studies, demonstrating satisfactory psychometric properties, including good

reliability and convergent validity in comparison with the SF-36. Moreover, it has been translated and culturally adapted into many languages, including Greek, in which it has been applied in research settings with satisfactory evidence of validity and usability. Owing to its brevity and ease of administration, the SF-12 is considered an appropriate tool for studies with limited data collection time.^{9,10}

2.5 Ethical considerations

The study received approval from the Scientific Council of the General Hospital, and was conducted in line with the principles of the Declaration of Helsinki. All nurses were informed about the aim of the study and provided their consent.

2.6 Statistical Analysis

Categorical variables were presented as absolute and relative (%) frequencies, whereas continuous variables were described using the mean, standard deviation (SD), median, and interquartile range (IQR). The normality of continuous variables was assessed using the Kolmogorov–Smirnov test and visually inspected with histograms and Q–Q plots. Independent-samples t-test and one-way ANOVA, as well as the non-parametric Mann–Whitney U test and Kruskal–Wallis test, were applied to examine differences in questionnaire scores according to nurses' characteristics, depending on whether the data followed a normal distribution. A two-sided p-value <0.05 was

considered statistically significant. All statistical analyses were conducted using SPSS software, version 28.0 (SPSS Inc., Chicago, IL, USA).

3. RESULTS

3.1. Sample Description

The study sample consisted of 120 nurses. With regard to sex, the majority of participants were women (86.7%), while men accounted for 13.3% of the sample. In terms of age distribution, the largest proportion of participants belonged to the 41–45-year age group (25.0%), followed by those aged over 50 years (22.5%), 36–40 years (19.2%), 25–35 years (17.5%), and 46–50 years (15.8%).

Regarding marital status, most participants were married (71.7%), while 21.7% were single, 4.2% divorced, and 2.5% living in cohabitation. The majority of the sample reported having siblings (93.3%) and children (73.3%). Concerning place of residence, most participants lived in Lamia (84.2%), whereas 15.8% reported residence in another area.

In terms of educational level, 50.0% of the sample held a degree from a Technological Educational Institute (TEI), 19.2% held a postgraduate degree, 13.3% had completed secondary education, 12.5% held a university degree, and 5.0% held a doctoral degree (Table 1).

Table 1. Sample characteristics (n=120)

	n(%)
Sex	
Male	16(13.3%)
Female	104(86.7%)
Age	
25–35	21(17.5%)
36–40	23(19.2%)
41–45	30(25.0%)
46–50	19(15.8%)
>50	27(22.5%)
Marital status	
Single	26(21.6%)
Married	86(71.7%)
Divorced	5(4.2%)
Cohabitation	3(2.5%)
Have siblings (Yes)	112(93.3%)
Have children (Yes)	88(73.3%)
Place of residence	
Lamia	101(84.2%)
Other	19 (15.8%)
Educational level	
Secondary degree	16(13.3%)
TEI degree	60(50.0%)
University degree	15(12.5%)
Postgraduate degree	23(19.2%)
Doctoral degree	6(5.0%)

3.2. SF-12 questionnaire scores

In Table 2, the descriptive statistics of the summary indices of physical and mental health derived from the SF-12 questionnaire are presented. The Physical Component Summary (PCS-12) showed a mean value of 44.6 with a standard deviation of 9.2, while the median value was 44.8 with an interquartile range (IQR) of 37.2–53.1.

Accordingly, the Mental Component Summary (MCS-12) demonstrated a mean value of 46.0 and a standard deviation of 9.6, with a median of 46.9 and an interquartile range of 40.0–53.8.

The values of both indices were lower than the theoretical mean of 50 points corresponding to the general reference population, according to the norm-based scoring of the SF-12.

Table 2. Description of quality of life according to the SF-12 (n=120)

	Mean (SD)	Median (IQR)
Physical Component Summary (PCS)	44.6(9.2)	44.8(37.2-53.1)
Mental Component Summary (MCS)	46.0(9.6)	46.9(40.0-53.8)

SD: Standard Deviation, IQR: Interquartile Range

3.3. Factors associated with QoL

Physical Component Summary Score

A statistically significant association with Physical Component Summary (PCS-12) was identified for age ($p=0.043$), marital status ($p=0.041$), and having children ($p=0.008$). More specifically, higher physical health scores were observed in the 36–40-year age group [mean=49.0 (SD=8.3), median=52.9 (IQR:40.4–56.1)] and the 25–35-year age group [mean=46.4 (SD=9.5), median=46.3 (IQR:40.0–52.7)], whereas lower scores were recorded among participants aged 46–50 years [mean=41.5 (SD=8.6), median=38.2 (IQR:34.8–47.9)] and 41–45 years [mean=42.7 (SD=9.7), median=42.0 (IQR:34.2–50.1)]. Concerning marital status, single or divorced participants exhibited higher physical health scores [mean=47.3 (SD=9.3), median=47.9 (IQR:39.7–55.9)] compared with those who were married or cohabiting [mean=43.7 (SD=9.1), median=42.8 (IQR:36.3–50.4)]. In addition, participants without

children demonstrated significantly higher physical health scores [mean=48.4 (SD=9.0), median=50.3 (IQR:42.3–55.6)] than those with children [mean=43.3 (SD=9.0), median=42.6 (IQR:35.8–50.3)] (Table 3).

Mental Component Summary Score

A statistically significant association with Mental Component Summary (MCS-12) was identified for sex ($p=0.020$) and having siblings ($p=0.001$). Specifically, men exhibited higher mental health scores [mean=51.1 (SD=6.2), median=52.4 (IQR:48.1–55.2)] compared with women [mean=45.2 (SD=9.8), median=45.5 (IQR:39.5–53.8)]. With regard to having siblings, participants who reported having siblings demonstrated significantly higher mental health scores [mean=47.0 (SD=8.8), median=47.9 (IQR:41.1–54.5)] compared with those who did not have siblings [mean=32.8 (SD=10.5), median=34.9 (IQR:28.4–38.5)] (Table 4).

Table 3. Factors associated with Physical Component Summary Score

	Physical Component Summary, PCS		
	Mean (SD)	Median (IQR)	p-value
Sex			0,120
Male	48.0(9.7)	52.9(39.7-56.5)	
Female	44.1(9.1)	44.1(36.9-51.0)	
Age			0,043
25–35	46.4(9.5)	46.3(40.0-52.7)	
36–40	49.0(8.3)	52.9(40.4-56.1)	
41–45	42.7(9.7)	42.0(34.2-50.1)	
46–50	41.5(8.6)	38.2(34.8-47.9)	
>50	43.8(8.8)	43.3(37.2-50.0)	
Marital status			0,041
Single/Divorced	47.3(9.3)	47.9(39.7-55.9)	
Married/Cohabiting	43.7(9.1)	42.8(36.3-50.4)	
Have siblings			0,265
Yes	44.3(9.0)	44.8(37.2-52.3)	
No	48.8(12.0)	50.1(36.9-59.4)	
Have children			0,008
Yes	43.3(9.0)	42.6(35.8-50.3)	
No	48.4(9.0)	50.3(42.3-55.6)	
Place of residence			0,730
Lamia	44.5(8.9)	44.8(37.4-51.9)	
Other	45.4(11.3)	44.7(34.7-57.2)	
Educational level			0,450
Secondary degree	43.0(9.8)	44.2(33.4-51.5)	
TEI degree	43.7(8.4)	43.3(37.3-49.1)	
University degree	47.4(9.7)	50.4(40.0-54.2)	
Postgraduate/Doctoral degree	45.9(10.3)	44.8(35.5-56.5)	

Table 4. Factors associated with Mental Component Summary Score

	Mental Component Summary, MCS		
	Mean (SD)	Median (IQR)	p-value
Sex			0,020
Male	51.1(6.2)	52.4(48.1-55.2)	
Female	45.2(9.8)	45.5(39.5-53.8)	
Age			0,262
25–35	42.8(11.2)	46.6(41.3-50.0)	
36–40	48.0(9.3)	51.5(40.2-55.2)	
41–45	47.2(8.5)	47.9(39.8-53.8)	
46–50	42.5(11.4)	41.3(31.9-55.1)	
>50	48.0(7.1)	47.5(42.1-53.5)	
Marital status			0,219
Single/Divorced	47.3(10.5)	51.5(41.2-55.7)	
Married/Cohabiting	45.6(9.3)	45.5(39.8-53.5)	
Have siblings			0,001
Yes	47.0(8.8)	47.9(41.1-54.5)	
No	32.8(10.5)	34.9(28.4-38.5)	
Have children			0,152
Yes	45.5(9.0)	45.3(39.5-53.6)	
No	47.3(11.1)	50.8(42.0-55.4)	
Place of residence			0,874
Lamia	45.9(9.8)	46.6(39.8-53.8)	
Other	46.6(8.4)	50.0(41.3-53.5)	
Educational level			0,281
Secondary degree	45.6(10.3)	46.6(38.7-53.4)	
TEI degree	45.4(9.1)	43.9(38.8-53.3)	
University degree	42.8(13.4)	46.6(34.8-50.1)	
Postgraduate/Doctoral degree	49.2(7.1)	51.8(44.5-54.4)	

4. DISCUSSION

According to the present findings, participants reported lower physical and mental QoL compared with the general population. The mean PCS-12 and MCS-12 scores were 44.6 +9.2 and 46.0±9.6, respectively, both falling below the normative reference value of 50 and suggesting diminished perceived well-being in the study population.

Based on the PCS-12 results, the lowest scores were observed among participants aged 46–50 years, followed by those aged 41–45 years. In addition, married or cohabiting participants reported lower levels of perceived physical health compared with single or divorced individuals. Similarly, participants with children exhibited poorer physical health than those without children. These findings suggest that middle-aged participants and those with greater family responsibilities may be more likely to experience reduced perceived physical health.

Based on the MCS-12 results, lower scores were observed among female participants compared with males. In addition, participants without siblings reported poorer perceived mental health than those who had siblings.

Among Greek nurses (n=508) working in public hospitals, health status was measured by the 36-item Short Form Health Survey, as moderate, mainly reflecting physical and psychological health problems, reduced vitality and energy levels, and increased physical pain. Multivariate linear regression analysis indicated that male nurses and those who intended to remain in their current position reported better physical and mental health outcomes. Furthermore, higher levels of job satisfaction were associated with improved physical and mental health. In particular, male gender, the opportunity to participate in continuous education, working exclusively on weekdays, employment in an urban hospital setting, willingness to remain in the same job and profession, and having no sick leave or fewer

than four sick leave days were consistently linked with better PCS and MCS.¹¹

Similarly, Bouzgarrou et al.,² conducted a study among nurses ($n=301$) in Tunisian public hospitals with a mean age of 42.60 ± 21 years and found that nearly half of the participants reported poor mental QoL, as assessed using the SF-12. In the same study, the mean MCS score was 42.57 ± 11.62 , reflecting reduced mental HRQoL in a substantial proportion of nurses. The present findings are in line with these results, as a similarly reduced level of mental health-related QoL was observed. In particular, the mean MCS score in the current sample was 46.0 ± 9.6 , which, although slightly higher, remains below the normative reference value of 50.

The findings by Bouzgarrou et al.,² indicated that mental QoL, as measured by the SF-12 instrument, was influenced by a range of health-related and occupational factors. In addition, obesity and insufficient engagement in regular physical activity were associated with poorer outcomes, along with the presence of musculoskeletal disorders and reduced work capacity. Occupational characteristics also played a significant role, as longer job tenure, higher perceived workload, strained interpersonal relationships with colleagues, and feelings of insecurity in the workplace were all associated with diminished mental QoL. Furthermore, an increased intention to leave the profession was linked to poorer mental well-being.

Regarding age, the lowest PCS scores were observed among participants aged 46–50 years. The association between age and poorer physical QoL may be explained through cumulative occupational strain over time. Rotational shift work can disrupt sleep patterns, contributing to reduced energy levels. Furthermore, nursing is a physically and psychologically demanding profession that requires continuous adaptation to high clinical workloads. Factors such as income and working conditions may also influence nurses' overall health status and energy levels. Therefore, the decline in physical QoL observed among older nurses may reflect the combined effects of prolonged occupational demands, fatigue, and reduced physiological resilience associated with aging. The relationship between nurses and aging reflects both the natural aging process and the impact of professional experiences on nurses' well-being. Successful aging is viewed as an adaptive process influenced not only by physical health but also by social, cultural, personal, and life-course factors. Understanding nurses' perceptions of aging is important, as their professional experiences and attitudes may shape their views of the aging process. However, the demanding nature of nursing, characterized by heavy workloads, emotional challenges, and continuous interpersonal demands, may contribute to physical and psychological exhaustion, ultimately affecting nurses' QoL and their experience of aging.^{2,6,11,12,13,14}

In terms of sex, male nurses demonstrated higher MCS scores. Bouzgarrou et al.² consistently identified gender as the only demographic variable significantly associated with mental HRQoL, reporting lower scores among female nurses than among males. Similarly, Ruiz-Fernández et al.,¹⁰ in a sample of 1,521 nurses from eight Spanish provinces, observed a clear gender gap in SF-12 mental HRQoL, with women showing lower MCS values than men. This difference has been partly attributed to additional extra-professional demands, such as work–family conflict, which may increase psychological burden among female nurses. In contrast, Ali et al.,¹ showed no association between gender and any of the physical health domains. This absence of differences may be explained by the uniform distribution of clinical duties in hospital settings, where work responsibilities are generally not differentiated by gender.

Concerning siblings, participants without siblings reported poorer perceived mental health than those who had siblings. A possible explanation for this finding is that nurses without siblings may lack an immediate family support system, which can limit emotional support, social interaction, and coping resources, thereby negatively affecting their perceived mental well-being. Participants with children exhibited poorer physical health than those without children. Living with children may have both positive and negative effects on health. It can enhance well-being through social and emotional support, structured daily routines, and a greater sense of meaning. However, it may also increase stress due to caregiving demands, role conflicts, financial strain, and limited social support, potentially leading to poorer health outcomes.^{15–17}

Several factors may confound the relationship between occupational exposures and QoL among hospital nurses, such as work-related conditions, lifestyle factors, and health status, which can independently influence nurses' perceived QoL and potentially distort observed associations. Musculoskeletal disorders (MSDs) may act as a confounding factor. Nurses are at increased risk of developing MSDs due to the physical demands and stress associated with their work. Since MSDs are linked to fatigue, pain, and reduced functioning, they may independently affect QoL.¹⁸ Occupational stress refers to the physical and emotional strain that occurs when work demands exceed nurses' abilities and available resources. Nurses, particularly those working with older adults, often face challenging situations, including complex patient symptoms and agitation, which may increase workplace stress.¹³ An additional confounding factor is anxiety, which has been consistently associated with reduced QoL. An inverse relationship has been observed across all QoL domains.¹⁹ Furthermore, depression may negatively influence QoL by compromising psychological functioning, and impairing their ability to effectively cope with occupational and personal demands.²⁰ Moreover, rural and

urban healthcare settings differ mainly in workload, resource availability, and access to support services. Rural clinicians often experience heavier workloads, limited healthcare resources, greater job instability, and reduced access to mental health services compared with their urban counterparts. These factors contribute to higher psychological distress and negatively affect clinicians' well-being.²¹ Additionally, the sample consisted predominantly of women (86.7%), which may have limited the ability to examine gender differences in QoL and may restrict the generalizability of the findings to male nurses.

Limitations of the study

Cautious should be given when interpreting the present findings due to limitations. First, the cross-sectional design does not allow conclusions regarding causal relationships between the variables under investigation and nurses' quality of life. Second, convenience sampling limits the sample's representativeness and, consequently, the generalizability of the findings to all hospital nurses in Greece. The small sample size may diminish power of the analyses, despite the identification of significant associations.

Nevertheless, the strength of the research is the use of the SF-12, which is a widely validated and internationally recognized instrument for assessing quality of life, facilitates comparisons with findings from other studies conducted in different healthcare settings and countries.

CONCLUSIONS

In conclusion, nursing personnel in a provincial hospital reported poorer physical and mental QoL compared with population norms. Reduced physical QoL was particularly evident among middle-aged participants and those with family responsibilities, including being married or cohabiting and having children. Lower mental QoL was observed among female participants and those without siblings. These findings highlight the influence of both demographic and family-related factors on nurses' well-being and underscore the need for targeted interventions to support vulnerable groups within the nursing workforce.

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