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Original Article

Predictors of quality of life of nursing internship students from five Saudi universities

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الملخص

أهداف البحث: تبحث هذه الدراسة في نوعية الحياة لطلاب الامتياز التمريضي والمتغيرات التنبئية لجودة نوعية الحياة لطلاب الامتياز التمريضي أثناء جائحة كوفيد-١٩. كما تم أيضا تقييم ارتباطات نوعية الحياة الخاصة لطلاب الامتياز التمريضي مع الجنس والعمر والخبرة التمريضية السابقة والمعدل التراكمي من الفصل الدراسي السابق.

طرق البحث: استخدمت هذه الدراسة تصميم المقطع العرضي الكمي من خلال نموذج المسح الإلكتروني لجمع البيانات المطلوبة. وتم اعتماد مقياس تقييم جودة الحياة المكون من ٢٢ عنصرا كأداة للمسح. أكمل المسح ٢٨٣ طالب امتياز تمريضي من خمس جامعات حكومية في المملكة العربية السعودية.

النتائج: تبين أن العمر والجنس والخبرة المتعلقة بالتمريض قبل التدريب مرتبطة بشكل كبير بدرجة مقياس تقييم جودة الحياة الإجمالية. وكان تأثير المعدل التراكمي لطلاب الامتياز التمريضي بسيطا. كما كان هناك فرق كبير في النتيجة الإجمالية لمقياس تقييم جودة الحياة على أساس العمر، والجنس، والمعدل التراكمي. أخيرا، وفقا لتقديرات تحليل الانحدار، تم العثور على أن العمر فقط هو المؤشر المهم لجودة نوعية الحياة الخاصة بطلاب الامتياز التمريضي.

الاستنتاجات: في هذه الدراسة، كان هناك ارتباط إيجابي بين نوعية الحياة لطلاب الامتياز التمريضي السعوديين وبين أعمارهم وجنسهم. يتمتع الذكور من طلاب الامتياز التمريضي بجودة نوعية حياة أكبر من الإناث، بينما لوحظ وجود نوعية حياة مرتفعة بين الطلاب الحاصلين على معدل تراكمي مرتفع قبل عام التدريب. وتم العثور على أن العمر فقط لطلاب الامتياز التمريضي ليكون مؤشرا موثوقا لجودة نوعية الحياة.

الكلمات المفتاحية: طلاب التمريض؛ السن؛ المعدل التراكمي؛ جودة الحياة؛ المملكة العربية السعودية

Abstract

Objectives: This study investigated the quality of life (QoL) of nursing internship students (NISs) and the predictive variables for the QoL of NISs during the COVID-19 pandemic. The correlates of QoL of NISs with their gender, age, prior nursing experience, and grade point average (GPA) from the previous semester are also assessed.

Methods: This study used a quantitative cross-sectional design through an electronic survey form for the collection of required data. The 22-item Quality of Life Evaluation Scale (QOLES) was adopted as the survey instrument. A total of 283 NISs from five public universities in KSA completed the survey.

Results: The students' age, gender, and nursing-related experience prior to their internship were all found to be significantly associated with the overall QOLES score (*p*

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values of 0.001, 0.001, and 0.01, respectively). The NISs GPA was found to be marginally significant ($p = 0.08$). A significant difference was identified in the overall QOLES score based on age ($p = 0.02$), gender ($p = 0.02$), and GPA ($p = <0.001$). Finally, as estimated by the regression analysis, only age ($p = 0.002$) was found to be a significant predictor of NISs' QoL.

Conclusion: In this study, the QoL of Saudi NISs was positively correlated with their age and gender. Male NISs had greater QoL than females, while a high QoL was observed among students with high GPAs before the internship year. Only the age of the NISs was found to be a reliable predictor of QoL.

Keywords: Age; GPA; Nursing students; Quality of life; KSA

Introduction

Nursing students (NSs) are exposed to a variety of stressful situations during their university studies; some of these situations may foster academic development, while others may have a detrimental effect on well-being and quality of life (QoL).[1] QoL is described as a person's understanding of their role in life regarding their aspirations, ambitions, standards, interests, and desires, taking into consideration the cultural background and value system in which they exist.[2] Mild psychological symptoms and depressive symptoms were found to be prevalent in a sample of Brazilian NSs.[3] The proportion of students with severe depressive disorders was found to be 25%, while 54% students were found to suffer from mild mental problems, with the first semesters being the most common times students experienced such symptoms.[3] Furthermore, it was found that the occurrence of minor depressive symptoms affects students' overall QoL.[3] Since a variety of social determinants have an effect on QoL, it is critical to consider it as a major element in curriculum planning in order to optimise QoL among NSs.[4]

Several coping mechanisms and proposals to help NSs enhance their QoL have been suggested in previous studies on QoL. One mechanism involves encouraging the development of a supportive culture that values spiritual inclusion in order to assist students of all faiths in dealing with their spirituality.[5] However, Aboshaiqah and Cruz (2019) proposed that nursing institutions in KSA should emphasise the importance of maintaining NSs' general well-being and QoL as they prepare for future careers as nurses.[6] Thus, Saudi nursing policymakers should adopt and enforce holistic strategies, pedagogy, and standards to encourage meaningful QoL among Saudi NSs.[6]

Previous research on QoL has shown that early diagnoses of physical, mental, and psychological problems experienced by NSs can help them seek solutions[7] and assist in solving QoL concerns in the future.[8] Further, health management, spiritual growth, stress management, and physical activity have been found to improve QoL.[9]

In view of the foregoing context, the purpose of this study is to determine the QoL of nursing internship students (NISs) during the COVID-19 pandemic and to correlate it with their gender, age, prior nursing experience, academic status, and grade point average (GPA) from the previous semester. We also identified predictive variables for nursing internship students' QoL.

Background of the study

After the World Health Organization (WHO) classified the emergence of COVID-19 as a pandemic on March 11, 2020, over 115 million cases have been reported worldwide, with over 395,000 cases in KSA as of April 2021.[10] By April 5, 2021, there had been 5,138,298 vaccine doses administered in KSA amidst increasing global cases.[10] The COVID-19 virus is continuing to mutate and becomes increasingly virulent in the absence of vaccinations.[11] The current COVID-19 pandemic has had a major impact on the global community's QoL, causing mental stress, a persistent threat of infection, and social strains, all of which negatively impact individuals' QoL.[12,13]

COVID-19 has also had a significant impact on the QoL of NSs. Before the COVID-19 pandemic, the most significant sources of stress for NSs were managing schoolwork and clinical shifts.[14,15] Because of exposure to stress, NSs' mental well-being had deteriorated[16]; and Saudi NSs often relate their strong mental health to a high QoL.[6] As a result, poor mental well-being can indicate low life quality. During the COVID-19 pandemic, NSs reported a low risk of infection in the classroom but a powerful fear of acquiring the disease in clinical practice.[17] Furthermore, NSs recorded poor QoL during the COVID-19 pandemic.[18] According to Savitsky et al. (2020), when the lockdown was lifted, Muslim students' anxiety levels improved,[19] and Japanese NSs showed a stronger sense of belonging during the pandemic.[20] Although previous studies have reported on the QoL of NSs, there is a paucity of information on NISs' QoL in the context of the COVID-19 pandemic, specifically among Saudi NISs.

Physical, social, and cognitive approaches and determinants of the QoL of college students, including NSs, have been reported in several published studies. Physical exercise was found to improve the QoL of college students. Regardless of the level of ability or performance, participating in a sport or physical activity has been shown to improve students' overall health and QoL.[21] In the physical domain of QoL, Salvi et al. (2020)[1] argued that inadequate sleep, sleep duration greater than 30 min, and a total of 6 h of bed sleep affect QoL. Additionally, the environmental domain of QoL is the least fulfilled, whereas the social domain is the most satisfied among NSs in Brazil.[1] Supporting this finding, a connection between eating disorders and QoL in healthcare students including NSs was reported by Costa et al. (2018),[22] which found a linear correlation between eating behaviour and year level.[22] However, enhancing health consciousness among

college students would improve their psychological well-being and QoL.[23] Furthermore, increased wellness consciousness reduces anxiety, social distress, and hyperactivity, all of which improve college students' QoL.[23] All of the previous factors affecting NSs' QoL were integrated in the study by Failde et al. (2019).[24] They revealed that a connection between eating habits, physical activity, and sexual activities are important determinants of NSs' QoL.[24] They reported that NSs' dietary habits necessitate a great deal of attention; both physical exercise and a less sedentary lifestyle have a direct impact on improving health, especially in the prevention of disease and the improvement of QoL and lifespan.[24] Moreover, the initiation of sexual relationships begins about the age of 16, which correlates with the age of school-children and university students, and impacts their QoL.[24] Prior to the COVID-19 pandemic, several studies reported on Saudi NSs' QoL and factors that may influence QoL, such as stress coping and anxiety. The findings of Aboshaiqah and Cruz (2019)[6] showed that Saudi NSs had a better view of their total QoL and well-being and that their psychological and physical health had the highest and lowest QoL experiences, respectively. Gender, academic year, neighbourhood, and monthly family income have all been found to have a huge impact on several QoL domains.[6]

Regarding stress and coping strategies impacting Saudi NSs' QoL, Al-Gamal et al. (2018)[25] reported that female Saudi NSs experienced the most stress and most frequently engaged in coping strategies. The findings revealed that a significant number of students were stressed when dealing with patients, pressures from educators and nursing personnel, and stress from their responsibilities and duties.[25] This was confirmed by Hamaidah et al. (2017),[26] who revealed that major issues affecting NSs are attributed to educator and nursing employee pressures as well as stress from classmates and everyday life.

Given the paucity of studies on NISs QoL during the COVID-19 pandemic, to gain a better understanding of the current state of QoL among Saudi NISs in a broader context during the COVID-19 pandemic, this study investigated the predictive variables and their correlates to QoL among Saudi NISs in a multi-university context.

Materials and Methods

Research design

This study employed a descriptive cross-sectional design to determine the predictors of QoL in NISs, as well as the relationship between QoL domains and respondents' demographic profiles.

Study setting

Our study was conducted at KSA's five state universities that offer a bachelor's degree in nursing. These universities are Taibah University in Almadinah Almunawwarah, University of Tabuk in Tabuk province, Majma'ah University in Al Majma'ah, University of Ha'il (UOH) in Ha'il province, and King Faisal University (KFU) in Hofuf, Al Ahsa.

Sampling and participants

The sampling method used in this study was total enumeration sampling, also known as census. During the second semester of the academic year 2020–2021, all registered NISs at each university were invited to participate in the study. There were two groups of NISs. Regular students belong to the regular nursing program (RNP), a four-year undergraduate program with a one-year internship during the fifth year. Bridging students were classified under the bridging nursing program (BNP). This is a two-year degree that requires a six-month internship for students who also hold a registered nurse certificate.[27]

A total of 283 Google survey forms were received from the respondents, each of which was fully completed and error-free and subjected to analysis. Nurses working in KSA have been required to pass the Saudi Nurse Licensure Exam (SNLE) starting in June 2017. They must hold a Bachelor of Science in Nursing (BSN) degree from an approved health science program, have begun studying during their internship year or be one year out from graduation to be considered for this test (Saudi Commission For Health Specialties). BSN students must complete an internship year equal to 120 credit hours between the eighth and ninth semesters for KFU (kfu.edu.sa); 40 h a week for 12 months during the fifth year for UOH (uoh.edu.sa) and Taibah University; and 12 months for Majma'ah University (mu.edu.sa) and Tabuk University (ut.edu.sa).

Ethical considerations

The ethics committees of the University of Ha'il and Taibah University approved this study after securing the necessary documentation and their Arabic translations. Likewise, the two ethics approvals were forwarded to the other three universities and were acknowledged, thus providing the authors with authorisation to proceed with the data collection. Due to the COVID-19 restrictions regarding face-to-face contact, data collection was conducted electronically using the online Google forms, with the directions and permission declaration clearly displayed at the top of the form. The participants' completion and submission of the online survey to the authors implied that they were willing to participate in the study.

Instrument

We used the Quality of Life Evaluation Scale (QOLES) by Chu, Xu, and Li.[28] There are many instruments that assess QoL, including the WHO QoL Scale (WHOQOL-100), the WHO QoL Scale Overview (WHOQOL-BREF), the detailed measure of QoL questionnaire (GQOLI-74), and the Medical Outcomes Research scale (SF-36), but Chu

et al. (2015)[28] argue that these are for mature QoL assessment indicators that can be used for people such as married couples. NSs in clinical education, however, are in a unique situation and thus have distinct physical, psychological, and social characteristics.[28] The QOLES instrument is composed of 22 items grouped into four categories: psychological health domain (seven items), physical health domain (six items), social relationship domain (four items), and environmental health domain (four items). Participants were asked to rate each item on a scale of 0–5 in terms of how they feel about their lives, with five responses possible for each item. The instrument had a Cronbach's alpha score of 0.82, which indicates that it is very reliable.[28]

We employed the standard procedure for adapting and translating the initial version of the instrument.[29] Three language experts associated with the research setting completed the translation procedure from English to Arabic. The content validity of the instrument was confirmed by a forward-backward translation. The instrument was then further tested by three experienced researchers from the College of Nursing who were fluent in both Arabic and English. The translated version of the instrument was pilot tested with a small percentage of the population (10%) to assess its reliability, and it obtained a Cronbach's alpha score of 0.731, indicating that the instrument is reliable.

Data collection

As part of preventive protocol during the COVID-19 pandemic, no face-to-face contact was permitted in the study setting; hence, we collected data using online Google Forms from February 20, 2021, to March 11, 2021. The Google Forms survey questionnaires were emailed to the participants' registered email addresses. Their confidential details were kept secret throughout the data collection process. We sent a message reminder to participants through *WhatsApp* every 48–72 h to ensure that the online forms were received successfully and that a high response rate had been achieved.

Statistical analyses

We used the IBM Statistical Package for Social Sciences (SPSS) version 27 to conduct statistical analyses in our research. The participants' demographic profile was described using frequency and percentage distribution, while the Chi-square test was used to determine the association between their profile and their responses to the instrument. The predictive variable of their QoL was determined using multiple regression analysis.

Results

Demographic profile of the participants

The study included a total of 283 participants. The distribution of participants according to demographic profiles is shown in Table 1. The majority, 271 (95.8%), were between the ages of 21 and 30, were female (67.8%), and had a regular academic classification (97.9%). Prior to the internship, 87 (30.7%) of the students had nursing experience. None of them had a D grade point average; instead, the majority had a B+ to A+ GPA.

Table 1: Demographic profile of participants (n = 283).

Profile variables	Frequency	Percentage
Age (in years)		
≤20	2	0.7
21–30	271	95.8
31–40	9	3.2
>41	1	0.4
Gender		
Male	91	32.2
Female	192	67.8
Academic classification		
Regular	277	97.9
Bridging	6	2.1
Nursing related experience prior to internship		
No	196	69.3
Yes	87	30.7
Grade Point Average (GPA)		
D	0	0
D+	1	0.4
C	4	1.4
C+	25	8.8
B	38	13.4
B+	66	23.3
A	96	33.9
A+	53	18.7

Association of the different demographic profiles with the overall QOLES score

The relationship between various demographic profiles and the overall QOLES score is shown in Table 2. With p values of 0.001, 0.001, and 0.01 respectively, age, gender, and nursing related experience prior to internship were all found to be significantly associated with the overall QOLES score. The relationship between GPA and overall QOLES score ($p = 0.08$) was found to be marginally significant.

Comparison of the overall QOLES score according to different demographic profiles

Table 3 compares the overall QOLES score with the different demographic profiles. There was a statistically significant difference in the overall QOLES score based on age ($p = 0.02$). As people get older, their overall QOLES scores tend to rise. There was also a statistically significant difference in overall QOLES scores between men and women ($p = 0.02$). Males scored significantly higher on the overall QOLES scale than females, with median scores of 3.32 and 3.18, respectively. Furthermore, according to GPA, there was a significant difference in overall QOLES scores ($p = <0.001$). With median scores of 3.50 and 2.45, those with a GPA of B had the highest overall QOLES

Table 2: Association of the different demographic profiles with the over-all QOLES score (n = 283).

Profile variables	Overall QOLES Score					Total	p-value*
	1 (n = 5)	2 (n = 85)	3 (n = 173)	4 (n = 17)	5 (n = 3)		
Age (in years)							<0.001 (S)†
≤20	1 (20.0%)	0	1 (0.6%)	0	0	2	
21–30	4 (80.0%)	84 (98.8%)	165 (95.4%)	16 (94.1%)	2 (66.7%)	271	
31–40	0	1 (1.2%)	6 (3.5%)	1 (5.9%)	1 (33.3%)	9	
>41	0	0	1 (0.6%)	0	0	1	
Gender							0.001 (S)†
Male	3 (60.0%)	16 (18.8%)	61 (35.3%)	8 (47.1%)	3 (100%)	91	
Female	2 (20.0%)	69 (81.2%)	112 (64.7%)	9 (52.9%)	0	192	
Academic classification							0.84 (NS)†
Regular	5 (100%)	84 (98.8%)	168 (97.1%)	17 (100%)	3 (100%)	277	
Bridging	0	1 (1.2%)	5 (2.9%)	0	0	6	
Nursing related experience prior to internship							0.01 (S)†
No	0	63 (74.1%)	121 (69.9%)	10 (58.8%)	2 (66.7%)	196	
Yes	5 (100%)	22 (25.9%)	52 (30.1%)	7 (41.2%)	1 (33.3%)	87	
GPA							0.08 (NS)†
D+	0	1 (1.2%)	0	0	0	1	
C	0	0	4 (2.3%)	0	0	4	
C+	0	5 (5.9%)	17 (9.8%)	3 (17.6%)	0	25	
B	0	5 (5.9%)	31 (17.9%)	2 (11.8%)	0	38	
B+	1 (20.0%)	29 (34.1%)	33 (19.1%)	3 (17.6%)	0	66	
A	3 (60.0%)	32 (37.6%)	50 (28.9%)	8 (47.1%)	3 (100%)	96	
A+	1 (20.0%)	13 (15.3%)	38 (22.0%)	1 (5.9%)	0	53	

*p > 0.05- Not significant (NS); p ≤ 0.05-Significant (S).
† Chi-square test.

Table 3: Comparison of the over-all QOLES score according to the different demographic profiles (n = 283).

Profile variables	Over-all QOLES Score Mean ± SD	p-value*
Age (in years)		0.02 (S)§
≤20	2.46 ± 1.03 (2.46)	
21–30	3.19 ± 0.57 (3.27)	
31–40	3.76 ± 0.80 (3.91)	
>40	3.32 ± 0.00 (3.32)	
Gender		0.02 (S)‖
Male	3.31 ± 0.65 (3.32)	
Female	3.15 ± 0.55 (3.18)	
Academic classification		0.88 (NS)¶
Regular	3.20 ± 0.59	
Bridging	3.24 ± 0.66	
Nursing related experience prior to internship		0.34 (NS)‖
No	3.19 ± 0.55 (3.27)	
Yes	3.21 ± 0.67 (3.32)	
Grade Point Average (GPA)		<0.001 (S)§
D+	2.45 ± 0.00 (2.45)	
C	3.02 ± 0.05 (3.00)	
C+	3.43 ± 0.47 (3.41)	
B	3.44 ± 0.44 (3.50)	
B+	3.07 ± 0.61 (3.12)	
A	3.11 ± 0.68 (3.05)	
A+	3.27 ± 0.44 (3.32)	

*p > 0.05- Not significant (NS); p ≤ 0.05-Significant (S).
Values in parenthesis are median scores.
§ Kruskal Wallis test.
‖ Mann Whitney U test.
¶ T-test.

Table 4: Predictors of QoL of nurse interns (n = 283).

Profile variable	β	SE	95% CI	P value
Age	0.511	0.167	0.183 to 0.839	0.002 (S)
Gender	−0.125	0.076	−0.274 to 0.023	0.08 (NS)
Academic Classification	−0.419	0.270	−0.950 to 0.113	0.12 (NS)
Nursing Related Experience	0.011	0.076	−0.139 to 0.161	0.89 (NS)
GPA	−0.036	0.027	−0.089 to 0.017	0.13 (NS)

$R^2 = 0.054$ adjusted $R^2 = 0.037$.
Linear Regression Analysis.

scores, while those with a GPA of D+ had the lowest overall QOLES scores.

Predictors of quality of life of nurse interns

Table 4 shows the results of a multivariate analysis used to identify predictors of NISs' QoL. Only age (p = 0.002) was found to be a significant predictor of NISs' QoL after the regression analysis.

Discussion

Considering the overall domain scores related to psychological factors, there is evidence that men have a better QoL than women. Men, unlike women, engage in a variety of risky habits, place a lower emphasis on healthcare, and pay little attention to psychological symptoms.[30,31] Female students have a higher level of intrinsic religiosity than male students in terms of coping mechanisms, which

correlates with a better QoL.[5] NSs in Brazil who do not have children have a higher standard of life.[7] Regarding demographic characteristics variables, one study showed that only gender had a correlation with QoL, with male students obtaining higher mean scores in the physical and psychological domains.[32] Previous research has shown that students experience distress in everyday situations, and that this heightened anxiety is mediated by the increasingly irregular living situations and pressures that have been caused by the current COVID-19 pandemic.[19]

The findings of our research suggest that students with a higher GPA (B and above) have better QoL. Similarly, Aghajari et al. (2018) found that students with a higher GPA are less likely to have a poor QoL.[33] This variation may be attributed to the university's background or the student's chosen course of study. Students who are burned out are stressed, anxious, and ineffective in the classroom, as well as less inspired and motivated, resulting in low academic performance. Furthermore, respondents with a low GPA had slightly lower scores in the environmental domain of the QOLES than those with a higher GPA.[34]

Experience acquired prior to enrolling in nursing school had a significant impact on NSs' QoL. According to one study, the majority of students had a positive experience with the introductory program, claiming that it inspired them, provided them with positive expectations, and brought them a sense of achievement[35] as well as the fact that clinical training is among the most crucial components of nursing education.[36]

The only predictor in our study that had a direct relationship with QoL is age. Our findings suggest that a person's QoL is influenced by their age. According to Cruz et al. (2018), being older has a negative impact on the QoL of NSs.[37] Furthermore, when people age, they assume an increasing number of roles, which can lower their standard of life.[37] The findings of Aboshaiqah and Cruz (2019)[6] revealed that Saudi NSs had a positive perception of their overall QoL and welfare, with their psychological and physical wellness having the highest and lowest QoL expectations, respectively. Gender, academic year level, neighbourhood type, and monthly family income all have significant effects on QoL.[6]

In their study, Villa-Boas et al. (2018)[38] reported that the strongest predictor of QoL for younger adults is social support, followed by salary, implying that younger adults who have both more social support from their friends and a higher degree of income have a greater QoL. While social support from friends and family members is almost often the most influential factor in middle-aged adults' QoL, and marital status is also significant.[38] Further, social support from family and earnings, are the strongest predictors of QoL in older people.[38] Given the importance of family social care in advanced adulthood in terms of QoL, approaches to assist families in providing this service must be established.[38] El Jawahri et al. (2014)[39] have found that older people have less psychiatric stress and greater mental well-being, which may justify why their QoL is maintained. The volatile QoL among NISs is a clear indicator of the rising psychological distress caused by the ongoing COVID-19 pandemic.[19] Savitsky (2020)[19] added that students often experience extreme anxiety as a result of financial instability, worries about their families' well-being, are apprehensive of sickness, have the desire to support and care for youngsters, and experience difficulty with distance education.

Limitations

The findings of our study may have some limitations, particularly in terms of generalisability in presenting the current state of QoL of NISs in KSA. Given that our study examined students from five universities, including more universities in KSA might have provided a more accurate and credible representation of NSs' QoL. Another possible limitation is the study's cross-sectional design. This type of research could only 'present observations on the condition of phenomena at a particular point in time but cannot infer actual changes in the phenomenon over time'.[40]

Conclusion

The participants' average QOLES scores in relation to their demographic profiles showed a statistically relevant difference, indicating that QoL was only correlated with their age and gender. In contrast to female interns, male interns have a greater QoL. Furthermore, those who do well academically prior to their internship year, as indicated by their GPA, have a higher QoL. Only the age of the NISs will predict a higher or lower QoL in terms of predictor variables.

Recommendations

Given the limitations mentioned, the findings of our study pave the way for further research into the same phenomenon at other universities, involving not only NISs but all NSs. As a result, we recommend that nurse researchers and administrators from Saudi Arabian colleges, both private and public, perform a similar study.

The need to continuously evaluate QoL of people, especially health personnel such as nurses who provide care to the public, is rooted in the WHO's definition of QoL as 'persons' interpretations of their role in life in relation to their aspirations, desires, standards, and interests in the light of the society and belief structures in which they live'.[41] This description represents the belief that QoL is a subjective determination of ones' overall functioning influenced by cultural, social, and environmental factors.

In view of this reality, our research, while involving five universities that produce holistically competent nurses, also recommends that the QoL of NSs, the next generation of healthcare professionals, be measured on a regular basis. This is one of the safest ways to guarantee that Saudi nurses are trained, primed, and empowered to play a vital role in

keeping KSA and its people healthy, regardless of whether there is a pandemic.

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This study did not receive any specific grant from funding agencies in public, commercial, or not-for-profit sectors.

Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

The Institutional Review Board (IRB) of University of Ha'il (IRB# H-2020-239; approved on 17/12/2020) and the Research Ethics Committee (REC) of Taibah University (TUCN-REC-2021-2-O; approved on 16/02/2021) approved this study.

Authors' contribution

RANG led the conceptualisation of the topic focus, examined relevant literature, and provided research materials. RANG and DJEB developed the methodology section. JDM, JNA, MBBL, and EGM collected and organised the data for analysis. RANG wrote the initial and final draft of article and organised the discussion according to the results assessment. DJEB provided support studies, literature in the derived results, and the final review of the manuscript. All authors participated in the overall implementation of the research protocol. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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