



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

## International Journal of Africa Nursing Sciences

journal homepage: [www.elsevier.com/locate/ijans](http://www.elsevier.com/locate/ijans)

## Quality of life of nursing internship students in Saudi Arabia during the COVID-19 pandemic: A cross-sectional study

Rizal Angelo N. Grande<sup>a</sup>, Vincent Edward R. Butcon<sup>a</sup>, Maria Charito Laarni Indonto<sup>a</sup>,  
Liza Mendizabal Villacorte<sup>a</sup>, Daniel Joseph E. Berdida<sup>b,\*</sup>

<sup>a</sup> College of Nursing, University of Hail, 81481, Saudi Arabia

<sup>b</sup> College of Nursing, University of Santo Tomas, Manila 1008, Philippines

## ARTICLE INFO

## Keywords:

COVID-19  
Frontliners  
Healthcare workers  
Nurse interns  
Quality of life

## ABSTRACT

**Background:** The COVID-19 pandemic caused an unprecedented negative impact on the usual way of life. The fight against this fatal virus demands the united force of healthcare workers, including nurse interns (NIs). Therefore, being unprepared for a crisis of this magnitude which never happened in a century, nurses and NIs experience stress, trauma, and mental health issues that affect their quality of life (QoL).

**Objectives:** This study inquired the demographic of the NIs, the responses of the participants to the domains of Quality of Life Evaluation Scale (QOLES), and the relationship between the participants' responses to the scale to each of their demographic profiles.

**Methods:** This study used a quantitative cross-sectional design through an electronic survey form in the collection of data. Utilizing total enumeration as sampling technique, 152 NIs in Saudi Arabia completed the survey.

**Results:** Across the 22-item questionnaire, the NIs still feel safe being in the hospital, clinic, or other healthcare facilities with a mean of 3.32; while item 8, which is having abundant energy, had the lowest mean of 1.91. The overall mean is 2.61, interpreted as 'important,' signifying that the participants 'agree to some extent.'

**Conclusion:** The QoL of the NIs focused more on their psychological wellbeing and social relationships while the environmental and physical domains had lesser emphasis. In terms of enhancing specificity, comprehensiveness, and generalizability of future studies in QoL, a larger sample and more rigorous design is recommended.

### 1. Introduction

The World Health Organization (WHO) declared the COVID-19 as a global pandemic on March 11, 2020 (Brown & Ladwig, 2020). Until today, there has been a steady increase in the number of positive cases and deaths in more than 100 countries globally. Nurses and other healthcare professionals, some even mobilized beyond their regular work schedule, heed the call of duty to provide the needed help (Sohrabi et al., 2020). All nurses, including student NIs, are at the frontline in the fight against the virus. Regular students enrolled in a regular nursing program (RNP), and bridging students under bridging nursing program (BNP), are the two types of internship students in Saudi Arabia. RNP is a four-year bachelor's degree with a one-year internship in the fifth year, while BNP is a two-year degree with a six-month internship for students who are currently employed in the health care sector (Aljohani, 2020). Their nursing program requires the students during nurse internship at

least a year to render required hours before receiving their certificate of completion, which is a requirement for future employment to healthcare facilities in Saudi Arabia (Bawazir et al., 2019).

During the pandemic, NIs showed high level resilience, a trait of an effective QoL and a value that nursing schools should integrate among their students (Chow et al., 2018). A QoL in resilience energized the core adaptation skills of persons against stress (Cooper et al., 2020). More than ever, it is during this period of COVID-19 that the QoL of people, especially the frontline workers should be assessed. Ensuring that they function at an optimum level is a priority concern (Aboshaiqah & Cruz, 2019). The impact of stress among NIs brought about by the pandemic is overwhelming. Stress alone disrupts the focus and attention of a person and the perception of external indicators (Moksnes et al., 2019). Providing care to patients during this pandemic produces stress and uncertainties among healthcare workers, notwithstanding the steady increase of patient admissions because of the COVID-19.

\* Corresponding author.

E-mail addresses: [rizalangelo28@gmail.com](mailto:rizalangelo28@gmail.com) (R.A.N. Grande), [vincent\\_butcon@yahoo.com](mailto:vincent_butcon@yahoo.com) (V.E.R. Butcon), [cherryindonto@gmail.com](mailto:cherryindonto@gmail.com) (M.C.L. Indonto), [lmvrnman@gmail.com](mailto:lmvrnman@gmail.com) (L.M. Villacorte), [deberdida@ust.edu.ph](mailto:deberdida@ust.edu.ph) (D.J.E. Berdida).

<https://doi.org/10.1016/j.ijans.2021.100301>

Received 27 November 2020; Received in revised form 5 March 2021; Accepted 17 March 2021

Available online 1 April 2021

2214-1391/© 2021 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Several studies on the QoL of nurse students were conducted prior to the COVID-19 pandemic using the same questionnaire used in this study. In these studies, the psychological domain was considered as the most significant, while the physical aspect was perceived to be less important (Aboshaiqah & Cruz, 2019). The perception of students from Spain, Poland, and Slovakia supported these results when their findings revealed high scores in the psychological domain (Kupcewicz et al., 2020). The physical domain was found to be more important among Indonesian nursing students (Damayanti et al., 2020). Some studies purport that emotional optimism and resilience are indicators toward the QoL among nursing students (Chang & Jang, 2019). These indicators maximize nursing students' optimum level of wellness and enhance their learning potential (Cruz et al., 2018). Also, some non-religious-oriented coping activities were correlated with improved social functioning among nursing students (Cruz et al., 2018). In terms of the sources of stress affecting the QoL, caring for patients, the clinical environment, and the students' peers and teachers were noted as the primary cause of stress among nursing students (Labrague et al., 2018). During the COVID-19 pandemic, NIs reported that acquiring the COVID-19 and infecting family members are the most stressful situations (Eweida et al., 2020). In general, these challenging circumstances led to the burden of an increased workload due to the pandemic, causing students to reconsider whether or not to continue with their internship (d'Aquin, 2020).

The preceding studies on the QoL of nursing students provided perspectives of their perceptions of the degree of importance of the different indicators of QoL. However, this current study inquired on the same perception among Saudi NIs during this COVID-19 pandemic. Hence, we provided answers to the following questions in this study: (1) What is the demographic profile of the participants in terms of age, gender, program classification, nursing related experience, and the general point average (GPA) of second semester of academic year 2019–2020, (2) the responses of the participants to each of the 22-item of the Quality of Life Evaluation Scale (QOLES); (3) the responses of the participants to the four domains of QOLES; and (4) the relationship between the participants' responses to the domains of QOLES to each of their demographic profile.

### 1.1. Background of the study

A great deal has been reported about the QoL around the globe. As the World Health Organization Quality of Life Group (WHOQOL Group) (1994, p. 43) defines, QoL is "an individual's perception of their position in life, in the context of the culture and value systems in which they live, and concerning their goals, expectations, standards, and concerns." Simply put, this definition illuminates QoL as a subjective perception that permeates in individuals' cultural, social, and environmental context (WHOQOL Group, 1998).

QoL encompasses a broad-ranging concept of an individual's state of life, health status, or life satisfaction. Various studies reported QoL is subjective and multifaceted. As such, it is affected by diverse factors like socioeconomic status, educational background, and socio-cultural beliefs (Chaturvedi & Muliya, 2016). These factors are essential in maintaining the sense of well-being of an individual. Zullig et al. (2005) proposed that QoL is largely referred to as the individual's subjective state of well-being. Thus, the subjective views of individuals of QoL are closely linked to the WHO's conceptual definition of health as a "state of complete physical, mental and social well-being, not merely the absence of disease or infirmity" (Sartorius, 2006).

Since QoL is an individuals' subjective perception of well-being, various studies were conducted to measure this phenomenon (WHOQOL Group, 1998). Hence, QoL directly measures a person's diverse domains of well-being such as physical, psychological, economic, spiritual, and social well-being that impact one's general health status (Wong et al., 2001). These domains are usually the foci of examination across diverse cultures and populations (Mason, 2018; Skevington et al.,

2004).

WHOQOL Group (1998) proposed six dimensions of QoL. This includes physical health, psychological aspect, level of independence, social relations, environment, and spiritual beliefs. Within these broad dimensions, the group confirms 25 detailed aspects (facets) of QoL that are reliable and valid internationally. In terms of physical health, some assessment equates this dimension to symptoms; symptoms of illness do not give an unobstructed view of a person's QoL. As reported, in some instances people with many symptoms often report high QoL while those with very few symptoms report it to be poor (Skevington et al., 2004). The level of independence is another dimension. This deals with functional status such as mobility and activities of daily living (WHOQOL Group, 1998). However, among all these six dimensions, spirituality proved to be the most overlooked due to its quantitative difficulty or just irrelevant to health and health care (Skevington et al., 2004).

Currently, there are thousands of assessment instruments to determine the QoL (Hall, 2020; Helgesson et al., 2020). WHOQOL-REF is a widely used QoL instrument developed by WHOQOL Group in 1998. This is a generic QoL scale that is well-known for cross-cultural comparisons of QoL among different countries (Skevington et al., 2004). There are four domains of health that are being explored which are physical, psychological, social, and environmental health. In palliative care research, the McGill quality of life (MQoL) questionnaire is commonly used (Cohen, et al., 2019). This tool is quite helpful in determining QoL of those living with serious and chronic illnesses. However, if QoL specifically focuses on an individual's perception of physical and mental health over time, the Health-Related Quality of Life (HRQoL) instrument would be applicable (Yin et al., 2016). Overall, QoL assessment tools assess one's perceived satisfaction or dissatisfaction in life (Michalos, 2014).

## 2. Methods

### 2.1. Study design and sampling

This study used a descriptive, cross-sectional design using a survey method in determining the QoL of NIs. This research was carried out in five government hospitals in north-central Saudi Arabia, where NIs are deployed for clinical internships.

We used total enumeration sampling for this study. The applicant must be a student nurse intern enrolled in the internship for the year 2020, regardless of gender and should be deployed to any of the study's government hospitals on active rotation. A total of 179 enrolled internship students took part in the study; 17 of them were requested to take part in a pilot test of the translated questionnaire, and 14 of them completed and returned the survey forms, which were then tested for reliability. The remaining 162 were considered the actual sample. The translated and validated questionnaires were sent to the remaining actual sample through Google Form, which obtained 156 answers. After a thorough examination of the returned forms, 152 were found to be error-free and properly completed. These were then added to the overall number of samples included in this study.

### 2.2. Study site

The study was conducted in five government hospitals in Saudi Arabia's north-central region, which have Nis on active rotation. These five government hospitals are all tertiary general hospitals with a total of at least 200 beds (Ministry of Health, 2020).

### 2.3. Ethical considerations

With approval number H-2020-239, this research was provided ethics approval to proceed. To maintain anonymity and confidentiality, we used Google Forms to gather data. The forms do not include any personal information about the participants. When participants

voluntarily responded and filled out the online survey form, it is a voluntary act of participation. Furthermore, the gathered data from the participants were stored electronically in a password-protected archive that only the authors have access to. All data from the database will be removed immediately after the manuscript is published.

#### 2.4. Instrument and survey form

Chu, Xu, and Li (2015) developed and published the tool Quality of Life Evaluation Scale (QOLES) for nursing students in clinical practice, which we used to collect data. Before it was used in this study, the scale's authors provide the permission. The QOLES is a 22-item questionnaire distributed across four domains which are physical health (6 items); psychological health (7 items); social relationships (5 items); and environmental health (4 items). The QOLES has a reliability index of Cronbach's alpha coefficient of 0.82. The physical health domain questions included items on pain and discomfort, fatigue and energy, rest and sleep, and working ability. The psychological health domains inquired on the positive attitudes and negative thoughts, self-confidence, memory, and concentration of the participants. The social relationships domain asked questions on interpersonal relationships, social support, and social station. Lastly, environmental health domain covered issues related to safety, clinical environment, opportunities to gain new skills and knowledge, and recreation. We asked each participant to answer the questionnaire on a scale of 0 to 5. In this scale, 0 is 'not important' (highly disagree or 0/10 occasions), 1 being 'less important' (disagree or 3/10 occasions), 2 means cannot decide (neutral), 3 means 'important' (agree to some extent or 5/10 occasions), 4 being 'more important' (agree or 8/10 occasions) and 5 is 'highly important' (highly agree or 10/10 occasions) on how they feel and think about each item. We have calculated inversely the responses of the participants to the six items that were negatively worded, which are items 2, 3, 5, 10, 12, and 17 (Chu et al., 2015).

A forward-backward translation has been used to translate the original QOLES questionnaire into Arabic. Three language experts independently checked the content validity. Four study experts who are fluent in Arabic and English further validated the translated QOLES questionnaire. We psychometrically validated the translated questionnaire with a small percentage of the target community (10%) to identify inconsistencies and verify its validity and reliability. As a result, we checked the reliability of the translated questionnaire, and we obtained a Cronbach's alpha coefficient score of 0.731, suggesting a relatively reliable instrument.

#### 2.5. Data collection

We conducted data gathering data through google online forms. There is no personal or face-to-face contact during data collection. We sent the forms through the students' registered email addresses. After sending the survey forms, we sent follow-up reminders through *WhatsApp* every 48 to 72 h to ensure a high feedback rate.

#### 2.6. Statistical analysis

The IBM SPSS version 22.0 was utilized in deriving the results. Descriptive statistics were used to present the data for questions 1 and 2; where mean, standard error, and confidence interval were utilized to show the results for each of the 22-items of the QOLES. For question 3, a one-way repeated ANOVA was used to determine the responses of the participants to the domains of the scale. To derive the results for question 4, Pearson's product-moment correlation coefficient was used to determine the relationship between each participant's sociodemographic profile and their responses to the QOLES. It is a value ranging from -1 to 1, with values close to zero showing weak or no linear association. A p-value of <0.05 served as the basis to determine the significance for the results of questions 3 and 4. The sign of the correlation

coefficient determines the direction of the relationship between the two variables. If it is positive, that means that the two variables go in the same direction (i.e., as one increases, the other also increases). If it is negative, the two variables move in opposite directions (i.e., as one increases, the other decreases).

### 3. Results

#### 3.1. Socio-demographic profile of the participants

The sociodemographic profile of the participants is shown in Table 1. A total of 152 participants were involved in this study. Among them, 73% are in the age of 20 years and below, while 23.7% are between 31 and 40 years of age, and 3.3% fall within the age range of 21–30 years old. In terms of gender, 53.9% are males and 46.1% females. In the program classification, 92% are classified as regular students or those who started in the university from the first level and 39.5% are in the bridging program or those with a 2-year diploma in nursing before admission. The percentage of those who have nursing-related experience before entering the nursing program is at 72.4% and 27.6% do not have any experience. Among the participants, 21.1% of them had a GPA of above-average or those with grades from A to A+, majority of at 44.7% have a GPA somewhere between C to C+, while 34.2% have GPA of either D or D+.

#### 3.2. QoL of the participants reflected in their responses to the QOLES

Table 2 reflects the responses of the participants to all the 22 items of the QOLES. We computed the average ratings per statement together with their corresponding standard errors. The last two columns give the 95% confidence interval for the mean. Table 2 also illustrates that despite the COVID-19 pandemic, the participants still feel safe being in the hospital, clinic, or other healthcare facilities with a mean of 3.32 while item 8, which is having abundant energy, had the lowest mean of 1.91. The overall mean of the 22 items is 2.61, interpreted as 'important.' This signifies that the participants 'agree to some extent' to the statements or they think and feel it on 5 out of 10 occasions.

#### 3.3. QoL of the participants across the four domains of the QOLES

The means, standard errors, and the 95% confidence intervals across the four domains of the QOLES are shown in Table 3. To determine whether there is a difference in the responses of the participants to these four domains, we conducted a one-way repeated measures ANOVA. This differs from one-way ANOVA because the domain scores are obtained from each participant, hence the name repeated measures. To stipulate

**Table 1**  
Demographic profile of the participants (n = 152).

Variable	Mean	
Age (in years)		
20 and below	111	(73%)
21–30	5	(3.3%)
31–40	36	(23.7%)
Gender		
Male	82	(53.9%)
Female	70	(46.1%)
Program Classification		
Regular	92	(60.5%)
Bridging	60	(39.5%)
Nursing Related Experience		
Yes	110	(72.4%)
No	42	(27.6%)
Grade Point Average (GPA)		
Below average	32	(21.1%)
Average	68	(44.7%)
Below average	52	(34.2%)

**Table 2**  
Responses of the participants to the QOLES (n = 152).

Items	Mean	SD <sup>a</sup>	CI <sup>b</sup>	Interpretation
1 Do you have confidence in the internship?	2.27	0.09	2.09 2.45	Less important
2 Do you have passive feelings in the internship?	2.49	0.08	2.33 2.65	Less important
3 Do you usually have a bad temper in the internship?	2.22	0.09	2.04 2.40	Less important
4 Do you think life is significant?	3.30	0.07	3.16 3.43	More important
5 Do you have a high level of psychological pressure?	3.03	0.07	2.90 3.17	Important
6 How is your memory in the internship?	2.29	0.08	2.14 2.44	Less important
7 Could you concentrate your attention in the internship?	2.06	0.08	1.89 2.23	Less important
8 Do you have abundant energy in the internship?	1.91	0.08	1.75 2.08	Less important
9 Are you satisfied with your sleep?	1.99	0.09	1.82 2.15	Less important
10 Do you have chronic pain or discomfort in the internship?	2.01	0.08	1.85 2.17	Less important
11 Do you have enough time to have a rest?	2.59	0.08	2.44 2.75	Important
12 Are you tired easily in the internship?	2.32	0.08	2.16 2.47	Less important
13 Are you satisfied with your interpersonal relationships?	2.63	0.08	2.47 2.78	Important
14 How do you get along with others?	2.11	0.09	1.94 2.29	Less important
15 Do you have recreation time?	3.22	0.08	3.07 3.38	Important
16 Do you have enough chances to get information you want in the internship?	3.14	0.08	3.00 3.29	Important
17 Are you feeling lonely?	3.30	0.07	3.16 3.45	More important
18 Are you satisfied with your social status?	3.17	0.07	3.03 3.31	Important
19 Are you satisfied with your social support?	2.14	0.08	1.99 2.30	Less important
20 Are you satisfied with your work ability?	2.74	0.08	2.58 2.91	Important
21 Is the clinical learning environment good for your health?	3.24	0.07	3.11 3.38	Important
22 Do you feel safe in the clinic?	3.32	0.07	3.19 3.46	More important
Overall mean	2.61			Important

<sup>a</sup> Standard Deviation.

<sup>b</sup> 95% Confidence Interval (Minimum and Maximum Limits).

**Table 3**  
Relationship of the participants' responses to the QOLES when grouped according to domains.

Domains	Mean	Standard Error	CI <sup>a</sup>	p-value
Psychological	14.13	0.12	13.90 14.36	0.00*
Physical	2.35	0.10	2.15 2.54	0.00*
Social relationship	12.33	0.16	12.02 12.63	0.00*
Environmental	3.80	0.08	3.65 3.95	0.00*

\*Significant p < .05.

<sup>a</sup> 95% Confidence Interval (Minimum and Maximum Limits).

more on this statistical test, one-way ANOVA extends *t*-test for independent samples, whereas one-way repeated ANOVA extends *t*-test for related samples. For this purpose, we used one-way repeated ANOVA globally to determine whether there is a significant difference in at least one pair among the averages of the four domains, namely psychological, physical, social relationship, and environmental.

Across all the domains, the age variable correlated to psychological domain has an *r* value of  $-0.059$ ; *r* value of  $0.007$  for physical; *r* value of  $-0.014$  for social relationship; and  $-0.007$  for environmental. In terms of gender correlation, the psychological domain has an *r* value of  $-0.037$ ; *r* value of  $0.005$  for physical; *r* value of  $0.067$  for social relationship; and  $-0.067$  for environmental. For the profile GPA correlated to psychological domain has an *r* value of  $-0.052$ ; *r* value of  $-0.002$  for physical; *r* value of  $-0.179$  for social relationship; and  $0.11$  for environmental. In terms of the profile academic classification correlated to psychological domain has an *r* value of  $-0.078$ ; *r* value of  $-0.016$  for physical; *r* value of  $0.009$  for social relationship; and  $0.063$  for environmental. Finally, for nursing related experience profile correlated to psychological domain has an *r* value of  $-0.025$ ; *r* value of  $0.036$  for physical; *r* value of  $0.018$  for social relationship; and  $0.012$  for environmental.

Regarding the mean score of each domain, the psychological domain with  $14.13$  had most of the responses. This shows the participants' thoughts and feelings of QoL. The physical domain scored the least mean of  $2.35$ . All the domains are significantly related to each other.

### 3.4. QoL of the participants across the four domains of the QOLES and its association to their socio-demographic profile

In this study, some variables are binary (dichotomous) such as the gender of the participants. For clarity in this aspect, since we used a binary variable in correlation with a quantitative variable such as domain scores, therefore Pearson's product-moment correlation coefficient is also called the point-biserial correlation coefficient. Table 4 shows only that the domain social relationship is significantly correlated to the profile variable GPA. The GPA is statistically related to each other since the *p*-value is  $0.028$  ( $<0.05$ ). The relationship between GPA (codes as  $1 = D, \dots, 8 = A +$ ) and social relationship factor score is negative or inverse. This relates to the fact that the higher the GPA is, the lower the social relationship factor score. For other dimensions or domains, none of the sociodemographic profiles are significantly related since their corresponding *p*-values are larger than  $0.05$ .

## 4. Discussion

Based on the findings of the study, the NIs perceived their QoL as 'important' with an overall mean of  $2.61$ . Vital to their work as NIs, they are continuously challenged to maintain a healthy body and optimized wellbeing to better provide care to their patients and meeting their academic workloads (Woods-Giscombe, 2020). In a study conducted by Chernomas and Shapiro (2013), results revealed a very good evaluation of the QoL among nursing students in response to stress, depression, and

**Table 4**  
Relationship of the QOLES domains to the socio-demographic profiles of the participants.

Domains	Age	GPA <sup>a</sup>	Gender	PC <sup>b</sup>	NRE <sup>c</sup>	p-value
Psychological	0.47	0.526	0.652	0.337	0.757	0.00*
Physical	0.931	0.985	0.947	0.842	0.658	0.00*
Social relationship	0.869	0.028*	0.411	0.908	0.822	0.00*
Environmental	0.932	0.179	0.413	0.441	0.879	0.00*

\*Significant p < .05.

<sup>a</sup> General Point Average.

<sup>b</sup> Program Classification.

<sup>c</sup> Nursing Related Experience.

anxiety. Interestingly, this study may show the influence of culture in the nursing internship students' QoL. Culture is a determinant in the perception of a person's health and welfare upkeep (Chu et al., 2015).

Assessing the QoL of nursing students especially during pandemic underscores the importance of healthy mind and body, making the absence of one detrimental to the other. Understanding this during this challenging period reflects the overall state of well-being of NIs still struggling with their academic demands (Cruz et al., 2018). As the results imply, there is a need to explore the semantic evaluation of the QoL in the Saudi context or in the Arab world. Labrague et al. (2018) conducted a study comparing the QoL among nursing students in three different countries. Results revealed cultural variances affecting the QoL in Nigeria, Greece, and the Philippines. Remarkably, in the present study, none of the NIs perceived QoL as highly important in any of the items or domains of the scale.

When nurses feel safe inside the hospital, they can provide better care to their patients. However, the question of safety and the perception of being safe transform when there are extraordinary events that may compromise the safety of everyone. This is the situation that NIs are facing during the COVID-19 pandemic. Eweida et al. (2020) reported that when nursing students are in their clinical duty, they are faced with a choice of whether to prioritize their safety and not perform their job or continue providing care despite the risks involved. This situation created a dilemma on the part of nursing students in choosing between rendering care to COVID-19 patients or leaving the workplace as reported in a study of nursing students in Great Britain during the COVID-19 pandemic surge of positive cases (Taylor et al., 2020). Yet, nurses may still feel safe when they are well trained and well-aware of the safety standards and protocols during adverse events (Choi et al., 2019). On the negative side, when NIs experience overwhelming adverse events and incidents that drain both their energy and focus, the impact may be pervasive. Occurrences like burnouts, colleague, or patient-related stress, or the work itself lead to significant negative use of one's energy (Casida et al., 2019). Relatively, Whittington et al. (2020) strongly argued that developing personal accomplishment such as self-reward, self-control, fairness, and community development can alleviate stress and burnout. Thus, NIs influence positive patient satisfaction and enhance quality care.

The NIs rated high scores for the psychological ( $m = 14.13$ ) and social relationship ( $m = 12.33$ ) domains compared to the physical ( $m = 2.35$ ). This finding is supported by previous studies (Aboshaiqah & Cruz, 2019; Labrague et al., 2018), where samples are also from the middle-east countries. These studies revealed that psychological health was rated highest, while physical health received the lowest rate. Similarly, in a study conducted in Brazil by Souza et al. (2012), female nursing students showed a decreased QoL in terms of the physical domain which is contrary to the findings of Araújo et al. (2014) in the same country where male nursing students rated physical health as the most significant domain of QoL. Conversely, a study among Turkish nursing students showed high evaluations of the physical domain (Yildirim et al., 2013). These studies should propel policymakers in nursing education to take into consideration the role of QoL among nursing students in the development of a professional nurse.

A significant relationship between GPA and social relationship ( $p = .028$ ) emerged. This may signify that even when NIs experience low social relationships they can still perform better academically. This result is cognizant to findings of Chang and Jang (2019), where socio-cultural factors are negatively correlated to the academic performance of the nursing students. Further, sociocultural activities such as those that involve the practice of one's religious beliefs enhances one's QoL in terms of the indicators in the environmental domains. Nonetheless, the other domains can be enhanced and developed using other strategies not related to one's faith (Felicilda-Reynaldo et al., 2019). Positive social support is essential in helping students perform better and more efficiently in the academe (Gray et al., 2013). Additionally, it enhances social relations and interactions among peers in the school creating an

atmosphere that enhances and nurtures academic achievements (Click et al., 2017).

## 5. Conclusion, recommendations, and limitation

In more ways than one, the COVID-19 pandemic changed the working climate of NIs and other healthcare professionals. NIs evaluated their QoL differently in each of the four domains. Among the four domains, their psychological domain was considered the most significant, followed by their social relationship. The environmental and physical domains, respectively, gained less attention within the four domains.

We recommend that structured interviews should be carried-out to further explore the perceptions of Saudi NIs of their QoL. A QoL program implementation or evaluation to identify the weak areas of QoL. To better understand the relationship between QoL and related nursing experiences of NIs, an explanatory-sequential mixed-method design would be beneficial. In terms of enhancing specificity, comprehensiveness, and generalizability of future studies in QoL, a large sample and more rigorous design is recommended. Replication studies within the Arab countries and other cultures will be helpful in capturing a better picture of QoL in different contexts. Lastly, future researchers are encouraged to explore the impacts of the level of health care facilities resourcing for NIs to address the environmental and physical domain of their QoL.

The study's limitation is that it was conducted utilizing a cross-sectional design in only one region of Saudi Arabia. Using a larger sample size and a more statistically sophisticated operation, it might provide a more generalizable results.

## Funding

No funding was provided for the conduct of this study from any person or entity.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References

- Aboshaiqah, A. E., & Cruz, J. P. (2019). Quality of life and its predictors among nursing students in Saudi Arabia. *Journal of Holistic Nursing*, 37(2), 200–208. <https://doi.org/10.1177/0898010118784147>.
- Aljohani, K. (2020). Nursing education in Saudi Arabia: History and development. *Cureus*, 12(4), Article e7874. <https://doi.org/10.7759/cureus.7874>.
- Araújo, M. A., Filho, W. D., Leite, L., Ma, R. K., Silva, A. A., & Souza, J. C. (2014). Nursing students' quality of life. *Northeast Network Nursing Journal*, 15, 990–997.
- Bawazir, A. A., Al-Surimi, K., Suwaidan, S. D., AlShehri, A. M., AlFarhan, A. I., & Aboulfotouh, M. A. (2019). Capacity and readiness of primary health care centers for implementation of the basic strategy for prevention and control of non-communicable diseases in Saudi Arabia. A case study from the Ministry of National Guard-Health Affairs, Riyadh, Saudi Arabia. *Saudi Medical Journal*, 40(6), 614–618. <https://doi.org/10.15537/smj.2019.6.24164>.
- Brown, T. M., & Ladwig, S. (2020). COVID-19, China, the World Health Organization, and the Limits of International Health Diplomacy. *American Journal of Public Health*, 110(8), 1149–1151. <https://doi.org/10.2105/AJPH.2020.305796>.
- Casida, J. M., Combs, P., Schroeder, S. E., & Johnson, C. (2019). Burnout and quality of work life among nurse practitioners in ventricular assist device programs in the United States. *Progress in Transplantation*, 29(1), 67–72. <https://doi.org/10.1177/1526924818817018>.
- Chang, S. J., & Jang, S. J. (2019). Social jetlag and quality of life among nursing students: A cross-sectional study. *Journal of Advance Nursing*, 75(7), 1418–1426. <https://doi.org/10.1111/jan.2019.75.issue-710.1111/jan.13857>.
- Chaturvedi, S. K., & Muliya, K. P. (2016). The meaning in quality of life. *Journal of Psychosocial, Rehabilitation, and Mental Health*, 3, 47–49 (2016). <https://doi.org/10.1007/s40737-016-0069-2>.
- Chernomas, W. M., & Shapiro, C. (2013). Stress, depression, and anxiety among undergraduate nursing students. *International Journal of Nursing Education Scholarship*, 10, /j/ijnes.2013.10.issue-1/ijnes-2012-0032/ijnes-2012-0032.xml. <https://doi.org/10.1515/ijnes-2012-0032>.

- Choi, E. W., Kim, G. Y., Shim, J. L., & Son, Y. J. (2019). Hospital nurses' perceived patient safety culture and adverse nurse outcomes in Korea. *Research and Theory in Nursing Practice*, 33(2), 134–146. <https://doi.org/10.1891/1541-6577.33.2.134>.
- Chow, K. M., Tang, W. K. F., Chan, W. H. C., Sit, W. H. J., Choi, K. C., & Chan, S. (2018). Resilience and well-being of university nursing students in Hong Kong: A cross-sectional study. *BMC Medical Education*, 18(1), 13. <https://doi.org/10.1186/s12909-018-1119-0>.
- Chu, Y., Xu, M., & Li, X. (2015). Psychometric properties of an instrument to measure nursing students' quality of life. *Nurse Education Today*, 35(7), e1–e5. <https://doi.org/10.1016/j.nedt.2015.03.019>.
- Click, K. A., Huang, L. V., & Kline, L. (2017). Harnessing inner strengths of at-risk university students: Relationships between well-being, academic achievement and academic attainment. *Perspectives: Policy and Practice in Higher Education*, 21(2–3), 88–100. <https://doi.org/10.1080/13603108.2016.1273260>.
- Cohen, S. R., Russell, L. B., Leis, A., Shahidi, J., Porterfield, P., Kuhl, D. R., Gardemann, A. M., & Sawatzky, R. (2019). More comprehensively measuring quality of life in life-threatening illness: The McGill Quality of Life Questionnaire – Expanded. *BMC Palliative Care*, 18, 92. <https://doi.org/10.1186/s12904-019-0473-y>.
- Cooper, A. L., Brown, J. A., Rees, C. S., & Leslie, G. D. (2020). Nurse resilience: A concept analysis. *International Journal of Mental Health Nursing*, 29(4), 553–575. <https://doi.org/10.1111/inm.v29.410.1111/inm.12721>.
- Cruz, J. P., Felicilda-Reynaldo, R. F. D., Lam, S. C., Machuca Contreras, F. A., John Cecily, H. S., Papanthanasios, I. V., ... Colet, P. C. (2018). Quality of life of nursing students from nine countries: A cross-sectional study. *Nurse Education Today*, 66, 135–142. <https://doi.org/10.1016/j.nedt.2018.04.016>.
- d'Aquin, V. (2020). Reflections of a COVID-19 graduate nurse student. *The Journal for Nurse Practitioners: JNP*, 16(8), 641. <https://doi.org/10.1016/j.nurpra.2020.05.003>.
- Damayanti, M. R., Sudira, P. G., Karmany, N. P. G., & Kristianingsih, K. N. (2020). The effectiveness of exercise on the go program to nursing students' physical fitness and quality of life in Bali. *Enfermeria Clinica*, 30(Supplement 1), 90–94. <https://doi.org/10.1016/j.enfcli.2019.09.029>.
- Eweida, R. S., Rashwan, Z. I., Desoky, G. M., & Khonji, L. M. (2020). Mental strain and changes in psychological health hub among intern-nursing students at pediatric and medical-surgical units amid ambience of COVID-19 pandemic: A comprehensive survey. *Nurse Education in Practice*, 49, 102915. <https://doi.org/10.1016/j.nepr.2020.102915>.
- Felicilda-Reynaldo, R. F. D., Cruz, J. P., Papanthanasios, I. V., Helen Shaji, J. C., Kamau, S. M., Adams, K. A., & Valdez, G. F. D. (2019). Quality of life and the predictive roles of religiosity and spiritual coping among nursing students: A multi-country study. *Journal of Religion and Health*, 58(5), 1573–1591. <https://doi.org/10.1007/s10943-019-00771-4>.
- Gray, R., Vitak, J., Easton, E. W., & Ellison, N. B. (2013). Examining social adjustment to college in the age of social media: factors influencing successful transitions and persistence. *Computers & Education*, 67, 193–207. <https://doi.org/10.1016/j.compedu.2013.02.021>.
- Hall, A. (2020). Quality of life and value assessment in health care. *Health Care Analysis*, 28(1), 45–61. <https://doi.org/10.1007/s10728-019-00382-w>.
- Helgesson, G., Ernstsson, O., Åström, M., & Burström, K. (2020). Whom should we ask? A systematic literature review of the arguments regarding the most accurate source of information for valuation of health states. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 29(6), 1465–1482. <https://doi.org/10.1007/s11136-020-02426-4>.
- Kupcewicz, E., Grochans, E., Kaducakova, H., Mikla, M., & Jozwik, M. (2020). Analysis of the relationship between stress intensity and coping strategy and the quality of life of nursing students in Poland, Spain and Slovakia. *International Journal of Environmental Research and Public Health*, 17 (12). doi:10.3390/ijerph17124536.
- Labrague, L. J., McEnroe-Petitte, D. M., Papanthanasios, I. V., Edet, O. B., Tsaras, K., Christos, K. F., ... Lucas, K. V. S. (2018). A cross-country comparative study on stress and quality of life in nursing students. *Perspectives in Psychiatric Care*, 54(4), 469–476. <https://doi.org/10.1111/ppc.2018.54.issue-410.1111/ppc.12248>.
- Mason, H. D. (2018). The relationship between existential attitudes and professional quality of life among nursing students. *Journal of Psychology in Africa*, 28(3), 233–236. <https://doi.org/10.1080/14330237.2018.1435049>.
- Michalos, A. C. (2014). Quality of life, satisfaction with. In A. C. Michalos (Eds.), *Encyclopedia of quality of life and well-being research*. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-0753-5\\_2379](https://doi.org/10.1007/978-94-007-0753-5_2379).
- Ministry of Health (MOH) Kingdom of Saudi Arabia, 2020. Retrieved from [https://www.moh.gov.sa/en/Pages/Default.aspx?fbclid=IwAR1UrR5R\\_xhoqQLZ12HW\\_RkWP5qbaFQhzNcwEfmiLU1aiibf\\_dKuXbSPI](https://www.moh.gov.sa/en/Pages/Default.aspx?fbclid=IwAR1UrR5R_xhoqQLZ12HW_RkWP5qbaFQhzNcwEfmiLU1aiibf_dKuXbSPI).
- Moksnes, U. K., Eilertsen, M.-E., Ringdal, R., Bjørnsen, H. N., & Rannestad, T. (2019). Life satisfaction in association with self-efficacy and stressor experience in adolescents – self-efficacy as a potential moderator. *Scandinavian Journal of Caring Science*, 33(1), 222–230. <https://doi.org/10.1111/scs.2019.33.issue-110.1111/scs.12624>.
- Sartorius, N. (2006). The meanings of health and its promotion. *Croatian Medical Journal*, 47(4), 662.
- Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organisation's WHOQOL-BREF Quality of Life assessment: Psychometric properties and results of the international field trial – a report from the WHOQOL Group. *Quality of Life Research*, 13, 299–310.
- Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., ... Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, 76, 71–76. <https://doi.org/10.1016/j.ijsu.2020.02.034>.
- Souza, I. M. D. M., Paro, H. B. M. D. S., Morales, R. R., Pinto, R. d. M. C., & Silva, C. H. M. D. (2012). Health-related quality of life and depressive symptoms in undergraduate nursing students. *Revista latino-americana de enfermagem*, 20(4), 736–743.
- Taylor, R., Thomas-Gregory, A., & Hofmeyer, A. (2020). Teaching empathy and resilience to undergraduate nursing students: A call to action in the context of Covid-19. *Nurse Education Today*, 94, 104524. <https://doi.org/10.1016/j.nedt.2020.104524>.
- Wong, E., Cronin, L., Griffith, L., Irvine, E. J., & Guyatt, G. H. (2001). Problems of HRQL assessment: How much is too much? *Journal of Clinical Epidemiology*, 54(11), 1081–1085.
- Woods-Giscombe, C. L. (2021). An innovative program to promote health promotion, quality of life, and wellness for School of Nursing faculty, staff, and students: Facilitators, barriers, and opportunities for broad system-level and cultural change. *Archives of Psychiatric Nursing*, in press, ISSN, 35(2), 185–188. <https://doi.org/10.1016/j.apnu.2020.10.018>.
- World Health Organisation Quality of Life Group. (1994). The development of the World Health Organisation Quality of Life assessment instrument (The WHOQOL). In J. Orley, & W. Kuyken (Eds.), *Quality of life assessment: international perspectives* (pp. 41–60). Berlin: Springer-Verlag.
- Whittington, K., Shaw, T., McKinnies, R., & Collins, S. (2020). Utilizing emotional exhaustion as a predictor for burnout among nurses. *Nurse Leader*, 2020, In press.
- The WHOQOL Group. (1998). The World Health Organisation Quality of Life assessment (WHOQOL): Development and general psychometric properties. *Social Science & Medicine*, 46(12), 1569–1585.
- Yildirim, Y., Kilic, S. P., & Akyol, A. D. (2013). Relationship between life satisfaction and quality of life in Turkish nursing school students. *Nurse and Health Science*, 15(4), 415–422. <https://doi.org/10.1111/nhs.2013.15.issue-410.1111/nhs.12029>.
- Yin, S., Njai, R., Barker, L., Siegel, P. Z., & Liao, Y. (2016). Summarizing health-related quality of life (HRQOL): Development and testing of a one-factor model. *Population Health Metrics*, 14, 22. <https://doi.org/10.1186/s12963-016-0091-3>.
- Zullig, K. J., Valois, R. F., & Drane, J. W. (2005). Adolescent distinctions between QOL and self-related health in QOL research. *Health Qual. Life Outcomes*, 25, 64–69.