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A circular collage of various healthcare-related images, including a person using a microscope, a person in a lab coat, a person in a wheelchair, a person in a lab coat, a person in a lab coat, and a person in a lab coat.

SPECIAL NURSING ISSUE

A Peer Reviewed Journal
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Journal of Health Sciences

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Special Nursing Issue

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PREVALENCE, ASSOCIATED FACTORS AND OUTCOMES OF PRESSURE INJURIES IN ADULT INTENSIVE CARE UNIT PATIENTS: THE DECUBICUS STUDY

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Abstract

The main objective of this study was to provide an international picture of the extent of pressure injuries and the factors associated with ICU-acquired injuries in adult ICU patients. Intensive care unit patients are particularly susceptible to developing pressure injuries. Epidemiologic data were collected on 15 May 2018. Due to delayed ethics approval, alternative dates were set for Nigeria, Brazil, and Libya. Anonymous patient data were collected using a case report form. They encompassed demographic and admission data and physiological data about study day, including the severity of disease assessment by the Simplified Acute Physiology Score II. Pressure injury occurrence was measured by direct observation according to the international staging definitions. Pressure injury risk was assessed by the Braden scale that combines 6 subscales: mobility, activity, sensory perception, skin moisture, nutritional state, and friction/shear, with lower scores reflecting higher risk. Follow-up data gathered included survival status, length of ICU stay, and hospital stay until discharge or at 12 weeks following the study day (7 August 2018). In this point-prevalence study encompassing 1117 ICUs in 90 countries across 6 continents and involving 13,254 adult patients, an overall pressure injury prevalence of 26.6% and an ICU-acquired prevalence of 16.2% were found. Although the prevalence was highest in low- and middle-income economies, our findings suggest that pressure injuries remain a considerable burden on the healthcare system worldwide and highlight the necessity of additional efforts in patient safety initiatives. Pressure injuries are common in adult ICU patients. ICU-acquired pressure injuries are associated with mainly intrinsic factors and mortality. Optimal care standards, increased awareness, appropriate resource allocation, and further research into optimal prevention are pivotal to tackling this critical patient safety threat.

Keywords: *decubitus epidemiology, ICU, pressure injury, pressure ulcer, outcome, risk factor, morbidity, mortality*

Pressure injuries remain among the most critical complications of hospitalization. They are associated with an increased infection risk, pain, and disability, a high level of dependence, more extended hospitalization, and, as such, higher hospital costs. The total annual cost for pressure injuries in the UK has been estimated to range from 1.4 to 2.1 billion pounds. Because severe pressure injuries are generally considered preventable, the occurrence rate of pressure injuries has increasingly been used as a quality indicator in hospital care. In addition, and by the ruling on the Inpatient Prospective Payment System by the Centers for Medicare and Medicaid, hospitals in the US are no longer reimbursed for hospital costs related to severe pressure injuries (stage III or higher). These evolutions have put substantial pressure emphasis on preventing pressure injuries. In the past decades, increasing efforts to prevent injuries have been made, but contrariwise, the challenge of pressure injury prevention seems to become more complex as medicine progresses. Indeed, favorable evolutions in emergency medicine and organ support have led to an increasing pool of long-term intensive care (ICU) patients. Patients admitted to ICU are at exceptionally high risk for pressure injuries because of their debilitated physical condition and exposure to numerous risk factors. Risk factors for ICU patients are generally the same as those in the general hospital population. Yet, ICU patients are exaggerated in terms of a more substantial effect and the presence of more factors simultaneously (Keller et al., 2002). Also, the proportion of elderly admitted to ICU is on the rise. In a university hospital, patients aged > 75 increased by one-third over 15 years. (Blot et al., 2009). The objective is to provide an up-to-date, international “global” picture of the extent and patterns of pressure injuries in ICUs. To do it, a 1-day prospective, multicenter point-prevalence study is performed. The large scale of the project should allow epidemiological analysis. More precisely, the study identified the following:

- Major risk factors for pressure injury development,
- shortage in the availability of evidence-based measures to prevent pressure injuries.
- malpractice in pressure injury prevention in particular regions or countries.
- occurrence rates of pressure injuries with/without accurate adjustment for risk profile and preventive measures taken.
- Benchmarking between regions/countries: clinical outcome associated with pressure injuries.
- Economic outcomes associated with pressure injuries (length of ICU stay) and linking these outcomes with local practice regarding prevention measures applied/available.
- Country and regional differences in prevalence of pressure injuries and outcome.

Methodology

Research Design

An international one-day point prevalence study was used, with follow-ups for outcome assessment until hospital discharge (maximum 12 weeks). Generalized linear mixed-effect regression analysis assessed factors associated with ICU-acquired pressure injury and hospital mortality. This method was chosen because of the significant variability in standards of care in the international sample. A mixed-effect regression analysis balances this effect by including a random effect for the country. Data transformations were avoided to ensure that the model result remained realistic rather than optimal but unrealistic. All demographic variables and those related to acute illness and chronic conditions were automatically included. Furthermore, additional variables (length of ICU stay before study day, World Bank classification, number of patients per nurse) were included based on clinical judgment and the literature on risk factors/mortality). As such, all variables were included following an exploratory approach, irrespective of their relationship with pressure injury/mortality, in univariate analysis.

Population and Sampling technique

The participants were adult patients older than 18 years and who were present on 15 May 2018. There were no exclusion criteria aside from this. Patients with severe clinical conditions that prevent safe pressure injury identification were not evaluated for the respective risk zones. If it is known that the patient had a pressure injury at the body sites that cannot be safely assessed, the stage of the pressure injury was not recorded as previously known.

Instrumentation

Analysis of Data

Data collection included three stages: On admission, on the study day, and during the follow-up period, where the outcome was at the ICU and hospital discharge. Data were collected on 15 May 2018. Due to delayed ethics approval, alternative dates were set for Nigeria, Brazil, and Libya. Anonymous patient data were collected using a case report form. They encompassed demographic and admission data and physiological data about the study day, including the severity of disease assessment by the simplified acute Physiology Score II (SAPS). According to the international staging definitions, pressure injury occurrence is measured by direct observation. The Braden scale assessed pressure injury risk, combining 6 subscales: mobility, activity, sensory perception, skin moisture, nutritional state, and friction/shear, with lower reflecting higher risk. Follow-up data gathered were survival status, length of ICU, and hospital stay until hospital discharge or at 12 weeks following the study day (7 August 2018).

Ethical Consideration

Overall, approval by established national, regional, or local ethics committees and institutional review boards was granted.

Result and Discussion

Hospital and Patients

A total of 1117 ICUs in 90 countries (6 continents) were recruited. Most were in mixed medical-surgical units (n=729; 65.2%) and university hospitals (n=675; 60.4%). Median (IQR) hospital and ICU capacities were 600 (329–1035) and 13 (8–20) beds, respectively; 1005 (89.9%) data collectors had studied a training module on pressure injury staging, of which 920 (82.3%) was the module developed for this project. Participation rates and ICU characteristics.

Prevalence

A total of 6747 pressure injuries in 3526 patients were identified, 3997 of which were ICU-acquired (59.2%; 2145 patients). Overall, 2081 patients had one pressure injury, 653 had 2, 411 had 3, 381 had >3 pressure injuries, 1284 had 1, 398 had 2, 243 had 3, and 220 had >3 ICU-acquired pressure injuries. Injuries were acquired before ICU admission in 1381 patients, developed in the ICU in 1922, and 233 patients developed injuries both before and during their ICU stays.

Table 2 reports the overall and ICU-acquired prevalence across the 6 continents. A detailed breakdown per Stage and continent is in Online Resource_9. The overall prevalence was 26.6% (95% CI 25.9–27.3) with 18.0% (95% CI 17.3–18.6; n=2383/13,254) of stage II or worse. Overall, stage II prevalence was 11.4% (95% CI 10.9–11.9), stage III prevalence 4.2% (95% CI 3.9–4.6), and stage IV prevalence 2.0% (95% CI 1.7–2.2). Prevalence of Unstageable and Suspected Deep Tissue Injuries was 2.1% (95% CI 1.9–2.4) and 2.3% (95% CI 2.1–2.6), respectively.

Table 2*Overall and ICU-Acquired Pressure Injury Prevalence According to Continents*

| | All n=13,254 | Europe n=5632 | North America n=1507 | Latin, Central and South America n=1040 | Asia n=4424 | Africa n=246 | Oceania n=405 |
|--|--------------------------|--------------------------|----------------------------|---|-------------------------|------------------------|------------------------|
| Overall prevalence | 3526 (26.6) 25.9–27.3 | 1630 (28.9) 27.8–30.1 | 344 (22.8) 20.8–25 | 365 (35.1) 32.2–38.1 | 1047 (23.7) 22.4–25 | 84 (34.2) 28.5–40.1 | 56 (13.8) 10.8–17.5 |
| ICU-acquired prevalence | 2145 (16.2) 15.6–16.8 | 1124 (20) 18.9–21 | 200 (13.3) 11.7–15.1 | 237 (22.8) 20.3–25.4 | 495 (11.2) 10.3–12.2 | 52 (21.1) 16.5–26.7 | 37 (9.1) 6.7–12.3 |
| Proportion ICU-acquired prevalence (%) | 60.8 | 69.0 | 58.1 | 64.9 | 47.3 | 61.9 | 66.1 |

ICU-acquired prevalence was 16.2% (95% CI 15.6–16.8), with 11.0% (95% CI 10.5–11.5) of stage II or worse. ICU-acquired stage II prevalence was 7.5% (95% CI 7.1–8); stage III prevalence 3.2% (95% CI 2.9–3.5); and stage IV prevalence 1.7% (95% CI 1.5–1.9). ICU-acquired prevalence of Unstageable and Suspected Deep Tissue Injuries was 2% (95% CI 1.7–2.2) and 2% (95% CI 1.8–2.3), respectively. ICUs from low and lower-middle-income economies, where the mean percentage of gross national income spent on healthcare is the least, reported the highest overall prevalence of pressure injuries (40.7%, 95% CI 36.7–44.8) 163 and of ICU-acquired pressure injuries (27.7%, 95% CI 24.1–31.5).

Factors Associated with ICU Acquired Pressure Injuries.

Generalized linear mixed-effects regression analysis identified the following factors as independently associated with ICU-acquired pressure injuries: older age, male sex, being underweight, admission due to emergency surgery, decreasing Braden scores, increasing ICU stay, chronic obstructive pulmonary disease, immunodeficiency, renal replacement therapy, mechanical ventilation on ICU admission, higher SAPS II score, and being in a low or lower-middle-income economy, with most robust, gradually increasing associations with worsening Braden scores and growing length of ICU stay before the study day, respectively (n=12,533; Table 3).

Table 3*Factors Independently Associated with ICU-acquired pressure injury*

| Variable | Odds ratio | 95% confidence interval |
|-----------------------------------|------------|-------------------------|
| Admission type: medical | 1.15 | 0.94–1.4 |
| Admission type: elective surgery | 1.02 | 0.8–1.29 |
| Admission type: emergency surgery | 1.28 | 1.04–1.58 |
| Age | 1.005 | 1.0007–1.009 |
| Male sex | 1.21 | 1.08–1.36 |
| Body Mass Index | | |
| 18.5–24.9: normal weight | Reference | |
| < 18.5: underweight | 1.58 | 1.23–2.01 |
| 25–29.9: pre-obesity | 1.03 | 0.9–1.17 |
| ≥30: obesity | 0.98 | 0.84–1.14 |

{table continues on the next page}

Risk of pressure injury

| Braden score 19–23: no risk | Reference | |
|--|-----------|------------|
| Braden score 15–18: mild risk | 2.91 | 1.81–4.68 |
| Braden score 13–14: moderate risk | 5.23 | 3.25–8.42 |
| Braden score 10–12: high risk | 6.52 | 4.07–10.44 |
| Braden score ≤ 9 : very high risk | 9.72 | 6.01–15.71 |
| Acquired immune deficiency syndrome | 1.52 | 0.74–3.11 |
| Cirrhosis | 0.89 | 0.65–1.22 |
| Chronic obstructive pulmonary disease | 1.24 | 1.03–1.49 |
| Diabetes | 1.05 | 0.92–1.2 |
| Heart failure | 1.07 | 0.92–1.25 |
| immunocompromised | 1.27 | 1.04–1.55 |
| malignancy | 0.95 | 0.8–1.14 |
| Peripheral vascular disease | 1.19 | 0.095–1.51 |
| Days in ICU before study day | Reference | |
| 0–3 days | Reference | |
| 4–6 days in ICU before study day | 2.28 | 1.90–2.74 |
| 7–9 days in ICU before study day | 3.57 | 2.91–4.37 |
| 0–12 days in ICU before study day | 4.12 | 3.29–5.17 |
| >12 days in ICU before study day | 7.51 | 6.42–8.78 |
| Mechanical ventilation on admission | 1.26 | 1.11–1.43 |
| Sedation | 0.95 | 0.82–1.09 |
| Muscle relaxant use | 1.08 | 0.83–1.41 |
| Vasopressor use | 1.04 | 0.91–1.2 |
| Renal replacement | 1.34 | 1.14–1.58 |
| Simplified Acute Physiology Score II score | 1.006 | 1.002–1.01 |
| Number of patients per nurse | 0.91 | 0.83–0.99 |
| Economy | Reference | |
| High-income economy | Reference | |
| Upper-middle income economy | 1.09 | 0.65–1.85 |
| Low- +lower-middle income economy | 1.82 | 1–3.29 |

Economy: categorized according to the 2016 World Bank classification (<https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS>)

Hospital Mortality

Overall hospital mortality was 22.5% (95% CI 21.8–23.3; n=2929/12 989). Following adjustment for demographics and morbidity data, severity of pressure injury showed a gradually increased association with hospital mortality: OR 1.31 (95% CI 1.1–1.55) for stage I, OR 1.66 (95% CI 1.41–1.95) for stage II, and OR 2.31 (95% CI 1.96–2.71) for stage III or worse, i.e. stage IV, Unstageable, or Suspected Deep Tissue Injury reports survival distribution for patients with increasing severity of pressure injuries (i.e., no pressure injury, stage I, stage II, and stage III or worse; Log-rank test: $p < 0.001$).

Discussion

In this point-prevalence study encompassing 1117 ICUs in 90 countries across 6 continents and involving 13,254 adult patients, an overall pressure injury prevalence of 26.6% and an ICU-acquired prevalence of 16.2% were found. Although the prevalence was highest in low- and middle-income economies, our findings suggest that pressure injuries remain a considerable burden for healthcare systems worldwide and highlight the necessity of additional efforts in patient safety initiatives. These observational data confirm and reinforce previous findings resulting from meta-analysis]. Additionally, they are complementary to conclusions from systematic reviews aiming at determining risk factors, such as the percentage of gross national income spent on healthcare in these economies being less than half as compared with high-income economies (4.9% versus 10.3%). Additionally, pressure injury prevention might not be a healthcare priority in developing countries.

Manzano et al. (2014) identified pressure injury as a significant independent predictor of mortality in mechanically ventilated patients (adjusted hazard ratio 1.28; 95% CI 1.003–1.65; $p=0.047$). The mortality associated with pressure injuries remains, however, unclear. As their occurrence often mirrors a general debilitated condition and high severity of acute illness, an association with mortality seems reasonable. However, our regression analysis demonstrated a gradual increase in mortality with increasing severity of pressure injuries despite adjustment for these covariates. Even though this does not imply causality, this observation calls for clinical concern towards patients with pressure injuries or those at high risk for developing such complications.

Stage I pressure injuries are generally considered reversible if promptly identified and appropriately managed by Coyer et al. (2017) and, therefore, often excluded from scientific reports (Laurado-Serra et al., 2018). They were nevertheless shown to be prone to deterioration, as in 6 Dutch acute care hospitals where 22.1% worsened to a deeper lesion (Bours et al., 2001). In line with several earlier prevalence reports, most pressure injuries in our study were stage I (38.1%). However, these often-underreported injuries emerged from the analyses as independently associated with hospital mortality. This calls for considering these lesions as total quality indicators and for the standardized recording of this data in institutional and research reports.

This study has limitations. The cross-sectional design might be biased toward patients with long ICU stays. Since the length of stay is associated with pressure injury, the reported prevalence might not represent the entire ICU population. Our data only represents a snapshot of the study and cannot account for potentially influencing factors such as staffing levels. Data on pressure injuries on mucosal surfaces have yet to be collected, as the international staging system does not stage these. Not all geographic regions are well-represented, thus impeding globally generalized results. As pressure injuries might be considered a result of suboptimal care, fear of criticism or institutional censure may have hampered objective reporting. If so, the actual prevalence might be higher than the rates identified. Accurate assessment of pressure injury staging is challenging, and data collectors are optional to be qualified tissue viability experts. Despite our efforts to obtain consistency in reporting using a well-documented data collection procedure and providing a training module, variability and errors in staging may have occurred. Given the study's scale, it was not feasible to assess the validity of the data using digital photographs. Nonetheless, the error resulting from our approach will, if anything, have led to random error estimations rather than a systematic error. The researchers could not doublecheck the self-reported number of participants who indicated having studied the training module, which may be prone to social desirability bias. As the researchers requested to report the number of "nurses" on the study day without further definition, it was unknown whether assistant nurses were also reported in calculating the number of patients per nurse. The unexpected association of this variable with pressure injury also needs further exploration. There is a view that suspected deep tissue injuries should not be included in epidemiological studies because it is unclear how many actual deep tissue injuries convert to pressure injuries. Their number was, however, small and unlikely to have a substantial impact. If any, on the estimated prevalence. Finally, our study may

be prone to random observer errors as data collectors depended on the reliability of patients' files to determine whether a pressure injury was ICU-acquired.

The major strength is that it is the first to present a worldwide picture of the epidemiology of pressure injuries in adult ICU patients and to map a high-risk profile based on a large global sample. It may act as an incentive for tackling this patient safety issue and provide local and regional baseline data for quality improvement programs. Furthermore, pressure injury staging was assessed using the gold standard of skin inspection by trained outcome assessors, and the study used a rigorous protocol with precise attention to detail in standardizing the data collection process.

Conclusions

This observational study identified a quarter of ICU patients with pressure injuries, albeit with considerable regional variation in prevalence. However, approximately 60% of the patients developed these lesions in the ICU, irrespective of the regional prevalence. As pressure injuries are a common complication and a substantial burden for healthcare systems worldwide, their prevention deserves increased clinical awareness and appropriate resource allocation. Besides, further investigations into the pathophysiology of pressure injuries in critical illness and optimal prevention strategies for ICU patients are pivotal to tackling this vital patient safety threat.

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ETHICAL WORK CLIMATE AND PROFESSIONAL MORAL COURAGE AMONG REGISTERED NURSES IN ADULT CARE SETTINGS

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Abstract

Professional moral courage is the foundation for nurses, who possess an ethical-moral duty to deliver safe and quality patient care. However, 64% of nurses experience a greater degree of ethical issues compared to other healthcare professionals. Studies have reported that organizational factors are associated with moral courage during ethical conflicts. Therefore, this correlational study aimed to determine the relationship between ethical climate and professional moral courage among nurses. A significant difference in professional moral courage among nurses when years of experience were also considered. One hundred and seven nurses from four selected hospitals in Ghana were recruited using a simple random sampling technique to answer the structured questionnaires. The statistical treatments utilized were Pearson correlation and ANOVA. The results showed that there was a *moderately significant positive relationship* between ethical work climate and professional moral courage ($r = .375$, $p = .000$). The study also showed a *statistically significant difference* ($p = .001$, $F = 7.658$) in professional moral courage when considering years of experience. Nurses with over 10 years of experience had higher moral courage ($M = 3.072$, $SD = .3351$). This study concludes that nurses should practice positive professional moral courage to enhance and sustain the healthcare organizational ethical climate. Support strategies such as multi-professional collaboration, ethics training, administrative support, and mentorship are recommended to strengthen nurses' professional moral courage in ethically challenging situations, influencing their ethical work climate. Further research should also be conducted employing a qualitative research design to gain nurses' insights and perception of the influence of ethical work climate on moral and professional courage.

Keywords: *ethical work climate, professional moral courage, nurses, ethical dilemmas*

Professional Moral Courage

Ethical practice is the cornerstone of the nursing profession, whereby nurses possess an ethical-moral duty to deliver high-quality care. However, in today's ever-changing healthcare environment, nurses face ethical issues daily while providing patient care. According to Giannetta et al. (2021), 64% of nurses experience greater ethical issues than physicians and other healthcare professionals. Nurses involved in ethically challenging situations can lead to ethical conflicts with various parties, between nurses and physicians or other healthcare professionals, colleagues, patients and family, and the healthcare organization (Hoskins et al., 2018). Identification of ethical dilemmas requires moral sensitivity and an awareness of ethical principles. Nonetheless, mere moral sensitivity and knowledge will not suffice. In ethical conflicts, nurses need professional moral courage as an element of their ethical competence for providing quality nursing care based on their professional codes of ethics and evidence-based quality (Prompahakul et al., 2021).

Professional moral courage is a valued characteristic and a fundamental virtue in nursing. Professional moral courage in nursing means defending and acting on the values and principles of professional ethics and related laws despite any resistance by others or any adverse consequences to oneself (Escolar-Chua, 2018). It is a person's courage or inner strength when acting in ethical conflicts according to ethical principles and one's values and beliefs. A morally courageous nurse must have ethical and professional competence, which means having knowledge and skills in ethics and clinical practice and the capability to act according to them (Lindh et al., 2009; Taraz et al., 2019). Morally courageous acting manifests itself as speaking up and acting as the patient's advocate when patients' rights, safety, or quality care are threatened.

As nurses, one of the important responsibilities of protecting patients' rights is the duty of advocacy, which takes the ethical virtue of courage. As per the study by Numminen et al. (2017), being a morally courageous nurse and acting with professional moral courage also involves moral integrity, responsibility, honesty, perseverance, and personal risk-taking by the nurse. A nurse with professional moral courage prefers commitment to patients in any case to their interests. With moral courage, nurses can advocate for their patients, improve patient safety, and promote quality of care, according to Sadooghiasl et al.'s (2018) study. Moreover, nurses can support their colleagues and well-being and develop themselves as moral professionals.

Some unfavorable implications of exhibiting professional moral courage have been identified in the research literature. The negative consequences encountered in nurses' morally courageous actions can be risking one's reputation, developing anxiety and stress, fear of being scolded, being bullied or harassed, becoming an outsider in the work community, and losing one's job (Hamric et al., 2015; Murray, 2010). Nevertheless, nurses ought to possess the moral courage to perform based on what is considered ethically right, provided personal values and criteria correspond to the accepted healthcare values.

Taraz et al. (2019) reported that professional moral courage was present among the nursing participants (73%) at low levels. Notwithstanding, professional moral courage, described as a virtue, can be learned and developed. Professional moral courage can become a natural part of nurses' behavior and moral deliberation through development. Edmonson's (2015) and LaSala and Bjarnason's (2010) studies revealed that age, gender, level of education, and professional rank are associated with higher levels of professional moral courage among nurses. In addition, individual and organizational factors can either promote or inhibit professional moral courage. Various studies suggest that personal experiences, such as positive life and work experiences, high personal ethical standards, and accountability (Escolar-Chua, 2018; Numminen et al., 2017), can strengthen the professional moral courage of a nurse. However, according to (Salari et al., 2022) and Nunthawong et al. (2020) studies, hindering factors of nurses' professional moral courage include negative experiences from earlier ethical conflicts, inadequate ethics training, poor multidisciplinary

collaboration, work-related weariness, lack of confidence, and moral distress. Other studies, such as Huang et al. (2016), have further demonstrated that professional moral courage is related to concepts such as moral sensitivity, emotional self-regulation, and self-efficacy. However, nurses' professional moral courage can be particularly strengthened with support from managers and the healthcare organization (Poikkeus et al., 2016).

Ethical Work Climate

Growing in quantity and complexity, ethical dilemmas in healthcare influence nurses and the standard of care delivered to patients. Compared to other African countries, 72% of nurses in Ghana encounter a greater number and severity of ethical issues (Afoko et al., 2022; Cherie et al., 2015). The conditions and practices of healthcare organizations have a bearing on how challenging, morally complex patient care issues can be addressed and resolved (Rosa et al., 2022). According to Bayat et al. (2019), it is also becoming increasingly apparent that an organization's ethical climate can impact nurses' ethical decision-making in the clinical setting.

The core of professional nursing provision is ethical work climate, a term first proposed by Victor and Cullen (1988). An ethical work climate type represents the organization's policies, procedures, and guidelines regarding moral issues (Boer et al., 2015). It relates to the perceptions nurses and health professionals have on how their organization should tackle ethical dilemmas. Ghorbani et al. (2014) found that 87% of nurses were more likely to address ethically challenging circumstances when they felt heard and supported by the manager and supervisor. This point of view emphasizes the crucial role of healthcare organizations in shaping and guiding nurse employees' ethical behaviors (Kleemola et al., 2020).

Scholars worldwide are increasingly interested in ethical work climate and its relation to different elements. For instance, a positive relationship between nurses' perception of the ethical work climate and their sense of job satisfaction has been found (Jang & Oh, 2019; Ozden et al., 2019), leading to higher standards of patient care.

According to Asgari et al. (2019), 76% of nurses who rated the ethical work climate more.

Positively had lower levels of moral distress. Nurses are more inclined to deliver high-quality patient care, resulting in fewer medical errors due to adequate support facilitated by an ethical work climate in nursing practice (Fradelos et al., 2021). On the other hand, ethical work climate has been found to correlate negatively with nurses' job burnout (Rivaz et al., 2020) and high turnover rates (Karca et al., 2018). Research has also reported that nurses' perceptions of the ethical work climate in their institutions significantly influence their organizational commitment and psychological well-being.

The value of an ethical work climate is largely determined by the relationship between nurses and peers, patients, physicians, management, and the hospital. Cooperation with the physician is based on mutual respect, trust, and active participation in treatment decisions, where managers support the nursing staff in their daily dilemmas and plan effective solutions (Bartholdson et al., 2015). Peer relations are based on mutual assistance in exchanging experiences, knowledge, and competencies. The patient-nurse relationship entails sharing information on the patient's health, providing professional care, and respecting the patient's wishes. As far as the relationship with the hospital is concerned, it mainly involves compliance with hospital guidelines and procedures and, on the other hand, the hospital's ability to communicate its mission clearly and concisely (Ozden et al., 2019).

Differences in the ethical work climate perception have been shown between healthcare professional groups. In the study by Boer et al. (2015), the ethical climate was perceived as poorer by nurses (69%) than by physicians (31%). Nurses scored significantly lower on supervisor support, use/helpfulness of directives, mutual respect, conflict handling, taking feelings into account, having a say, and working with competent colleagues. According to the study by Dziurka et al. (2022),

the highest mean score for the hospital ethical climate was found in the “peers” subscale and the lowest in the “physicians” subscale. This indicates that the nurses shared good relations mainly within their respective professional groups rather than with physicians. Dziurka et al. (2022) highlighted that problems with communication, lack of support, issues concerning respect for other people’s opinions, mutual trust, and involvement in the decision-making process while working with physicians worsened the perceived hospital ethical work climate among nurses and the quality of health care. Similar results were reported by Suhonen et al. (2015) and Teraz et al. (2019). Likewise, in the study of Bartholdson et al. (2015), nurses felt that they did not influence medical decisions.

Nurses with a master’s degree or another educational background (doctoral degree, vocational education) expressed a more favorable perception of the ethical work climate than those with a Bachelor’s degree (Boer et al., 2015). Similar results were obtained by Ghorbani et al. (2014), where mean scores of ethical work climate increased as nurses’ educational levels increased. In contrast, Constantina et al. (2019) highlighted that nurses with higher education reported poorer average perception of the ethical work climate across all dimensions.

In line with previously published studies, a variety of aspects, such as the engagement of hospital management, their leadership skills, and team-leading techniques, interaction with other healthcare providers, and workplace culture, have an impact on the level of ethical work climate in hospitals (Fradelos et al., 2021; Suhonen et al., 2015). Concerning the hospital’s ethical

Climate, as perceived by nurses, differences between countries may be determined by both working and cultural conditions, such as nursing shortage, type of ward, systems of values, communication system in nursing groups and organizations, and leadership style (Khoshmehr et al., 2020; Vryonides et al., 2018).

Although descriptive and qualitative studies have investigated the levels and perception of ethical work climate and professional moral courage, they have failed to determine the relationship between the two concepts. Furthermore, there is a gap in the literature focusing on nurses working in adult care settings in Ghana and West Africa. Therefore, this study aimed to identify the relationship between ethical work climate and professional moral courage among Ghanaian nurses. Specifically, it answered the following questions:

1. Is there a significant relationship between ethical work climate and professional moral courage among registered nurses?
2. Is there a significant difference in professional moral courage among registered nurses when years of experience are considered?

Methodology

Research Design

This quantitative study utilized a correlational research design to examine the relationship between ethical work climate and professional moral courage among registered nurses. This type of research design was selected after considering the study’s variables and research questions.

Population and Sampling Techniques

The researchers used a simple random sampling technique to recruit 107 nurses in four selected hospitals in Ghana. The inclusion criteria for the respondents were: a) registered nurses with a Bachelor of Science in Nursing (BSN) Degree and b) nurses with one and above years of working experience. The exclusion criteria for the respondents were: a) working in a non-adult care clinical setting, b) nurse supervisors, and nurse administrators.

Table 1
Demographic Profile of the Respondents

| Demographic Variable | | Frequency | Percent (%) |
|----------------------|-----------|-----------|-------------|
| Sex | Males | 38 | 36 |
| | Females | 69 | 64 |
| Years of Experience | 1-4 Years | 35 | 33 |
| | 5-9 Years | 44 | 41 |
| | 10+ Years | 28 | 26 |
| | Total | 107 | 100 |

Instrumentation

The Hospital Ethical Climate Survey (HECS) developed by Olson in the 1990s, was used to measure the ethical work climate of nurses. It is a 21-item questionnaire assessed by the respondent on a 5-point Likert scale (from 1 – “never” to 5 – “always”). HECS consists of 5 subscales which examine relations between the respondent and their colleague, physicians, managers, patients, and hospital. The Nurses’ Moral Courage Scale (NMCS) developed by Numminen et al. (2018), was used to measure the professional moral courage of nurses. It is a 21-item questionnaire assessed by the respondent on a 5-point Likert scale (from 1 – “strongly disagree” to 5 – “strongly agree”). NMCS consists of 4 dimensions: compassion and true presence, moral responsibility, moral integrity, and commitment to good care. The Cronbach’s alpha internal consistency and reliability coefficient for HECS was 0.91 and NMCS was 0.93.

In determining the strength of the relationship, Cohen’s (1998) absolute correlation values was utilized where $r = .10$ to $.29$ meaning small or low, $r = .30$ to $.49$ is medium or moderate, $r = .50$ to 1.0 is large or high. Furthermore, in determining the significant difference value where $.01$ = small effect, $.06$ = moderate effect, $.14$ = large effect was used. All these Likert scales are based on Vagias’ (2006) Likert scale recommendation.

Data Analysis

The study utilized the SPSS version 22 to analyze the data. Research question one was answered using Pearson Correlation Coefficients to determine the relationship based on the strength and direction of nurses’ ethical work climate and professional moral courage. Research question two was answered using ANOVA to determine the significant difference in professional moral courage among nurses when years of experience were considered.

Ethical Considerations

Permission and approval were sought from the nurse managers of the four selected hospitals to gather data. For the study’s data collection, the researcher employed two research assistants in Ghana. Before distributing the questionnaires, the research assistants clearly explained the purpose of the study and obtained informed consent from the respondents in line with the inclusion criteria. The questionnaires contained key information regarding the study and researchers’ contact details in case of additional respondent inquiries. The respondents’ privacy was protected by providing anonymous and voluntary participation.

Participants had the right to withdraw from the study at any stage. Furthermore, the participants’ identities were not disclosed, and only aggregate data were presented. The questionnaires were collected and sealed after completion. The research assistants encoded the raw data in an Excel Spreadsheet and sent it to the researcher for statistical treatment. All ethical principles and considerations were taken into account throughout the study.

Results and Discussion

Pearson correlation coefficient was used to examine research question one to determine the relationship between ethical work climate and professional moral courage among nurses. The study showed a moderately significant positive relationship between ethical work climate and professional moral courage ($r = .375, p = .000$) at a 95% confidence interval. This means that as the ethical work climate increases among nurses in the clinical setting, their professional moral courage increases. The results confirm LaSala and Bjarnason (2010), Taraz et al. (2019), and Sadooghiasl et al. (2018) studies that suggest ethical work climate is significantly related to professional moral courage among nurses.

Table 2

Relationship Between Ethical Work Climate and Professional Moral Courage

| Correlations | | | |
|----------------------|---------------------|----------------------|----------------------------|
| | | Ethical Work Climate | Professional Moral Courage |
| Ethical Work Climate | Pearson Correlation | 1 | .375** |
| | Sig. (2-tailed) | | .000 |
| | N | 107 | 107 |

***. Correlation is significant at the 0.01 level (2-tailed).*

The Difference in Professional Moral Courage When Considering Years of Experience

A one-way between-groups analysis of variance was conducted to explore the impact of years of experience on professional moral courage. Participants were divided into three groups according to age: Group 1: 1 to 4 years; Group 2: 5 to 9 years; Group 3: 10 years and above. There was a statistically significant difference at the $p > 0.001$ level in professional moral courage score in the age group: $F = 7.6$. Despite reaching statistical significance, the actual difference in mean score between the groups was small. The effect size, calculated using eta squared, was .05. Post-hoc comparison using the LSD test indicated that the mean score for Group 3 ($M = 3.072, SD = .3351$) was significantly different from Group 1 ($M = 2.891, SD = .5148$) and Group 2 ($M = 2.875, SD = .4034$). This means nurses with over 10 years of experience had higher moral courage. The study rejects the null hypothesis that there is no significant difference in professional moral courage when considering years of experience. The results confirm the studies of Kleemola et al. (2020) and Khoshmehar et al. (2020) that suggest that years of experience affect professional moral courage among registered nurses.

Table 3

ANOVA Table for Professional Moral Courage When Considering Years of Experience

| ANOVA | | | | | |
|----------------------------|----------------|-----|-------------|-------|------|
| Professional Moral Courage | | | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 3.209 | 2 | 1.405 | 7.658 | .001 |
| Within Groups | 53.321 | 105 | .215 | | |
| Total | 56.530 | 107 | | | |

Table 4
Multiple Comparisons on Years of Experience

| | | Dependent Variable: Professional Moral Courage | | | 95% Confidence Interval | |
|--------------------------------|----------------|--|-----------------------|-------------|--------------------------------|------------------------|
| (I) Years of Experience | | Mean Difference (I-J) | Std. Error | Sig. | Lower Bound | Upper Bound |
| 1-4 years | 5-9years | .1068 | .1102 | .333 | .110 | .324 |
| | 10Years above | .2811 | .0801 | .235 | .133 | .449 |
| 5-9years | 1-4 years | .1068 | .1102 | .333 | .324 | .110 |
| | 10 years above | .1842 | .0913 | .045 | .004 | .364 |
| 10 years and above | 1-4 years | .2811* | .0801 | .000 | .449 | .133 |
| | 5-9 years | .1842* | .0913 | .035 | .364 | .004 |

*. The mean difference is significant at the 0.05 level.

This study sought to determine the relationship between ethical work climate and professional moral courage among registered nurses. A significant difference in professional moral courage among nurses when years of experience were also considered. The study's results revealed a moderately significant positive relationship between ethical work climate and professional moral courage. The study also showed a statistically significant difference in moral courage when considering years of experience. Nurses with over 10 years of experience had higher moral courage. The results suggest that as the ethical work climate increases among nurses in the clinical setting, so does their professional moral courage. Furthermore, nurses with additional years of experience possess higher moral courage. Therefore, this study concludes that nurses should practice positive moral courage to enhance and sustain the healthcare organizational ethical climate.

The results of the study suggest that nursing administrators should promote a positive ethical climate by establishing nurses and multi-professional collaboration regarding identifying and resolving ethical dilemmas. Support strategies at the individual and organizational level, such as in-service training and workshops, continuing ethics education, formation of ethics committees, availability of both human and material resources, and administrative support and supervision, are recommended to strengthen nurses' professional moral courage in ethically challenging situations, in turn impacting their ethical work climate. In addition, nurses with more experience should mentor novice nurses to enhance their professional moral courage in the clinical setting. Further research studies may employ a qualitative research design to gain nurses' insights and perceptions of the influence of ethical work climate on professional moral courage.

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FACTORS ASSOCIATED WITH MATERNAL LIFESTYLE PRACTICES DURING THE FIRST 1000 DAYS AND STUNTED GROWTH IN CHILDREN UNDER FIVE YEARS IN A BARANGAY IN QUEZON PROVINCE

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Abstract

Malnutrition during the first 1000 days can cause severe and irreversible harm to children's growth and development. Despite substantial efforts, it remains a significant health problem worldwide. This research paper investigates the factors contributing to malnutrition during this crucial life stage. Guided by the PRECEDE-PROCEED model, a descriptive, evaluative, descriptive comparative, and descriptive correlational research design was used. One hundred mothers with children ages 0-23 months old were conveniently sampled. The analysis of the data utilized descriptive statistics and inferential statistics. The result of the study showed that mothers have a very high knowledge ($M=12.09$; $SD=1.84$) positive attitude ($M=3.14$; $SD=0.19$), fair infant and young child feeding practices (IYCF) ($M=2.29$; $SD=0.29$) and good maternal lifestyle practices ($M=3.00$; $SD=0.33$) about health and nutrition aspects during the first 1000 days. The attitude and maternal lifestyle practices had a low positive significant relationship ($r=.229$; $p=0.22$). Also, supplementary feeding and lifestyle practices had a low negative significant relationship ($r=-.234$; $p=.01$). Furthermore, the study showed that the mothers' knowledge ($p=.947$), and IYCF practices ($p=.217$) are not significantly associated with stunting among children. There is also no significant difference in stunting, healthy lifestyle practices, and demographics among respondents. In conclusion, data shows the need to improve mothers' lifestyles and IYCF practices. Moreover, this study suggests looking at other factors that may cause malnutrition in the community, such as the quality of diet, sanitation, and health conditions of mothers during pregnancy.

Keywords: *first 1000 days, malnutrition, stunting, infant and young child feeding practices, maternal lifestyle practices*

Malnutrition is a condition of the body resulting from deficiencies, excess, or imbalance of essential nutrients (WHO, 2020), which covers both undernutrition and overnutrition (Hinojosa et al., 2022). Although there has been a substantial improvement in the economy, an increase in health spending, and better access to essential health interventions, child undernutrition remains a public health concern in the Philippines (Capanzana, 2020).

Stunting is a condition that results from chronic undernutrition characterized by reduced skeletal growth caused by long-term insufficient nutrient intake and/or frequent infections (Fufa, 2022; Kim et al., 2019). In 2020, the World Health Organization reported that 149.2 million children under the age of five were stunted worldwide with a prevalence of 22.0 %. Data show that stunting is distributed in different regions of the world, with 0.6 million found in Northern America, 0.5 million children in Oceania, 4.8 million in Latin America and the Caribbean, 58.8 million in Africa, and the highest number in Asia in 81.7 million. In 2015, the prevalence of stunting in the Philippines was recorded at 33.4 percent with a high prevalence rate found in ARMM (45.2%), Eastern Visayas (41.7%), MIMAROPA (40.9%), and Bicol (40.9%) (FNRI, 2016).

However, despite efforts to improve child nutrition, the figure slowly increased again in 2015 due to human disputes, climate change, economic crises, and the recent COVID-19 pandemic (WHO, 2020). As a result, the world is not on track to achieve Zero Hunger by 2030 (WHO, n.d.). Additionally, in the Philippine Plan of Action for Nutrition (PPAN) for 2017-2022, the country's commitment to the global community is way beyond the outcome target for stunting, which is targeted at 21.4 % by the end of 2022 (NNC, 2017). Therefore, to achieve the goal of a 50 % reduction in stunting by 2030, the World Health Organization estimates that the annual rate of decline must double from 2.1 to 3.9% per year.

Given its importance in the child's development, good nutrition should be provided to infants and small children in the early years of their life. However, there is limited published empirical evidence on stunting determinants' size, interdependence, and relative importance. For this reason, this study will examine and analyze the factors associated with stunting during this crucial period in a barangay in Quezon province and implement a program that will improve the lifestyle during the first 1000 days.

Methodology

Research Design

The study adopted a quantitative research method to determine the interaction of the studied variables. Specifically, the research investigated the relationship between knowledge, attitude, IYCF practices, and supplementary feeding participation of mothers with stunted growth among young children and its association with maternal lifestyle practices. The research also recognized the importance of the demographic profile of the participants and its association with maternal lifestyle and stunting, thereby analyzing their impact using a descriptive method. The researcher believes that a descriptive evaluative, descriptive comparative, and descriptive correlational research design was the most applicable to determine the purpose of the study.

Population and Sampling Technique

The study was conducted in a barangay in Quezon province. The target populations were paired mothers and children 0-23 months old in the barangay living in the barangay, and mothers had their pre- and post-natal check-ups at the barangay health station. The research used the purposive sampling technique to select 100 mothers as the study population. The study will not include children 0-23 months and mothers who are not residing in the barangay and did not have their check-ups done in the barangay health stations.

Instrumentation

Using the PRECEDE-PROCEED framework, this research assessed the factors associated with stunted growth among children. The instrument used for this study is a self-reported survey questionnaire. The survey questionnaire was formulated using different literature and guidelines. There were four main sections in the questionnaire: 1) Demographics, which is divided into three sub-parts, the information about the family, the child, and the mother, which includes monthly income and household size, mother's information, i.e., age, educational attainment, working status, and health problems during pregnancy, and child's age, weight and height, 2) Infant and Young Child Feeding Practices, 3) Mother's knowledge on health and nutrition in the first 1000 days, 4) Attitude on healthy practices; and 4) Healthy lifestyle practices during the first 1000 days. In the knowledge part of the questionnaire, mothers were asked to answer each question with true or false. On the other hand, the sections on the attitude and beliefs of the mother about health and nutrition used a 4-point Likert scale to determine the degree to which the respondents practiced (always or never) and agree or disagree with the statements.

Analysis of Data

The study used a descriptive evaluative, descriptive comparative, and descriptive correlational to determine the factors associated with stunted growth in the first 1000 days in a barangay in Quezon province and to identify the association of the identified problem in the community with the demographic profile of the respondents.

Descriptive statistics such as mean and percentages were used to describe the demographic profile of the target population, the extent of knowledge of the participants, attitude, infant and young child feeding, and lifestyle practices during the first 1000 days. Spearman's rank correlation was done in the study to test the association of stunting with knowledge, attitude, IYCF, and supplementary feeding participation. The same statistical treatment was also performed to determine the association of lifestyle practices with knowledge, attitude, IYCF, and supplementary feeding participation. Mann Whitney U test was done to identify differences in height for age status with the respondents' demographic, such as age, educational attainment, work status, and family monthly income, as well as differences with the healthy lifestyle and the same moderator variables.

Ethical Consideration

The study conducted on the factors associated with stunted growth among children under five years was approved by the Adventist University of the Philippines Ethics Review Board. Information about the purpose of the survey, objectives, and procedures was discussed with the respondents before obtaining their written informed consent to participate in the survey.

Results and Discussion

The results of the study aimed to determine the level of knowledge, attitude, IYCF practices, and lifestyle practices in the early life of the children and determine the factors associated with stunted growth among children.

Table 1 presents the characteristics of the study children and their mothers, as well as the socio-demographic and economic status of the households. The study covers a total of 100 children ages 0-23 months. More than half of the participants have a family income of 8,000 and below (59%), with the majority having a household size of five or less (70%).

In the study conducted by Guirondola et al. (2021), it was emphasized that households with higher incomes enable the family to secure adequate, diverse, and frequent safe foods and to ensure proper hygiene and sanitation. Moreover, stunting was significantly correlated with large family sizes because of the disparity between household food supply and demand (Fufa, 2022). The results were supported by the finding found by Angeles-Agdeppa et al. (2019) that having more dependents

in the family could lead to poor nutrition due to a burden on resources for food and healthcare services, inadequate dietary intake, and an increased risk of disease transmission.

The health and demographic profile of the mothers were also investigated in this study. Most mothers are between the ages of 20 and 29 years old (41%), high school graduates (64%), non-working status (82%), and have normal BMI (89%).

Maternal factors and their association with stunting have been investigated in several studies. Literature showed that mothers < 20 years, having lower educational attainment, and not working increase the possibility of child stunting (Guirondola et al., 2020; Islam et al., 2020). Researchers have found that educated mothers are more likely to seek health information, feed their children properly, and participate in healthy activities during pregnancy and lactation (Amaha et al., 2021). Moreover, the children of mothers with below-normal BMI have been reported to be the strongest risk factor for linear growth at two years of age (Guirondola et al., 2020). According to a study from Ethiopia, children of underweight mothers are more likely to experience macro- and micronutrient deficiencies (Amaha et al., 2021) and have 3.55 times higher odds of being stunted in a study in Bangladesh (Guirondola et al., 2020).

Additionally, the study examined the health problems experienced by mothers during conception. Most of the mothers had no health problems (83%), while some mothers experienced hypertension (5.0%), and others had asthma (8.0%). In 2020, Capanzana et al. accentuated the importance of maternal nutrition, endocrine and metabolic signals, and placental development in regulating the growth of the fetus. Birth weight and gestational age of newborns both indicate the perinatal environment.

Table 1
Demographic Profile of Respondents

| Profile | Frequency | Percent |
|-------------------------------|-----------|---------|
| <u>Age in years</u> | | |
| <20 | 10 | 10.0 |
| 20-29 | 49 | 49.0 |
| 30 and above | 41 | 41.0 |
| <u>Educational Attainment</u> | | |
| No schooling | 1 | 1.0 |
| Elementary | 10 | 10.0 |
| High School | 64 | 64.0 |
| Technical Vocational | 7 | 7.0 |
| College | 14 | 14.0 |
| Post Graduate | 4 | 4.0 |
| <u>Work Status</u> | | |
| Working | 18 | 18.0 |
| Not Working | 82 | 82.0 |

{table continues on the next page}

Mother's Nutritional Status Before Pregnancy

| | | |
|--------------|----|------|
| Underweight | 4 | 4.0 |
| Normal | 89 | 89.0 |
| Above Normal | 7 | 7.0 |

Health Problems During Pregnancy

| | | |
|---------------|----|------|
| Hypertension | 5 | 5.0 |
| Heart Disease | 2 | 2.0 |
| Asthma | 8 | 8.0 |
| None | 83 | 83.0 |
| Others | 2 | 2.0 |

Family Monthly Income

| | | |
|-----------------|----|------|
| 8,000 and below | 59 | 59.0 |
| 8,001-15,000 | 25 | 25.0 |
| 15,001-30,000 | 14 | 14.0 |
| Above 30,000 | 2 | 2.0 |

Household Size

| | | |
|----------------------------|----|------|
| 5 family members and less | 70 | 70.0 |
| More than 5 family members | 30 | 30.0 |

The nutritional status of children using the height-for-age indicator is presented in Table 2. Most of the children have normal height-for-age status (77 %). Stunting prevalence among children in the study is 13.0 %, while severe stunting is at 3.0 percent. The prevalence rate of stunting in the study is below the national data in 2015, which is 22.0 % (FNRI, 2016), and the global prevalence is 22.0% (WHO, 2020).

Table 2*Nutritional Status of the Children in Terms of Height-for-Age*

| Categories | Frequency | Percent |
|------------------|-----------|---------|
| Severely Stunted | 3 | 3.0 |
| Stunted | 13 | 13.0 |
| Normal | 77 | 77.0 |
| Tall | 7 | 7.0 |

Table 3 and Table 4 show the extent of knowledge on health and nutrition of the mothers about the first 1000 days. Data show that mothers have a very high knowledge with a mean of 12.09, $s = 1.84$.

The high level of knowledge on health and nutrition among mothers can be explained by the mothers' educational attainment, where most of the respondents had at least secondary level education. According to Guirindola et al. (2020), stunting is less common in babies whose mothers have completed at least a secondary school because these mothers have a greater understanding of how to prepare meals in more effective ways and choose to cook for their families over purchasing prepared foods whose nutritional value and sanitation are uncertain (Saleh et al., 2021).

Table 3*Extent of Knowledge on Health and Nutrition in the First 1000 Days.*

| Distribution of Correct Responses on Knowledge Items (N = 100) | |
|---|-----------|
| Knowledge Items | Frequency |
| The best way to stop the child from crying is to give them electronic gadgets such as cellphones.* | 95.00 |
| A child without cough and fever does not need immunization* | 94.00 |
| If children refuse many foods, experiment with different food combinations, tastes, textures, and methods of encouragement. | 94.00 |
| The best time to introduce complementary foods is at 6 months and 1 day of age. | 86.00 |
| Growth monitoring for a child 0-23 months should be done once a year.* | 86.00 |
| A woman's age and nutritional status before she becomes pregnant can affect her and her future baby. | 85.00 |
| Vegetables and fruits can be given as complementary food. | 85.00 |
| Intervals of at least 3 years between births have health benefits for both mother and baby. | 84.00 |
| A woman with an inverted nipple cannot breastfeed her child.* | 83.00 |
| Babies can be weaned off from the breast at six months of age.* | 83.00 |
| A working mother can still give breast milk to her baby through milk expression. | 77.00 |
| In giving complementary feeding at six months, lugao should be thick to avoid choking. | 68.00 |
| Children 9-12 months old should be given 3-4 meals per day. | 67.00 |
| In exclusive breastfeeding, water is allowed after giving breast milk.* | 67.00 |
| Iron and folic acid are given only to pregnant mother who is anemic.* | 55.00 |

*False items

Table 4*Knowledge Level of the Participants (n=100)*

| Level | Frequency | % |
|---|-----------|------|
| Very High (12-15) | 64 | 64.0 |
| High (8-11) | 35 | 35.0 |
| Low (4-7) | 1 | 1.0 |
| Very Low (0-3) | 0 | .00 |
| Overall Mean: M =12.09,s=1.84 (Very High) | | |

The study also investigates the extent of the attitude of the mothers toward lifestyle practices in these crucial years. Table 5 shows the result of the positive attitude of the mothers toward lifestyle practices ($M=3.00$, $s=0.33$) and Table 6 shows the extent of lifestyle practices among mothers. Results show an overall good practice of lifestyle with a mean of 3.0, $s=0.33$.

The attitude and lifestyle practices of the mothers during the first 1000 days have a significant impact on preventing stunting in children. Fetal development, child health and survival, and long-term health are all significantly influenced by environmental and nutrition variables during the pre-and post-natal phase (Saleh et al., 2021). This is supported by the findings of Capanzana et al. (2020) that stunting among children in the Philippines has its origin in utero and can be prevented by having access to a healthy prenatal and postnatal environment, as well as proper healthcare and support.

Table 5*Extent of the Attitude of the Mothers on Lifestyle Practices in the First 1000 Days*

| Items | M | SD |
|--|------|------|
| What the child weighs is very important | 4.00 | 0.00 |
| *Fruit juices can be a good substitute for fresh fruits for children 6- 23 months | 3.99 | 0.10 |
| What a child eats can make a big difference in his chance of being healthy | 3.98 | 0.14 |
| *A formula-fed child is healthier than a breastfed child | 3.97 | 0.17 |
| Proper food and personal hygiene are important during food preparation | 3.75 | 0.63 |
| *How much a child eats is less important | 3.73 | 0.45 |
| Nutrition is an important consideration in buying foods | 3.71 | 0.69 |
| *A child must be fully immunized at 15 months | 3.64 | 0.48 |
| *Some people are born to be fat, and some are thin or short; there is not much we can do about it. | 3.44 | 0.50 |
| *A good complementary food must include food items for at least 2 of the 7-food group | 3.35 | 0.48 |
| Foods that are thick enough to stay in the spoon give more energy to the child | 2.33 | 1.06 |
| All nutritious foods are expensive | 1.92 | 1.11 |
| A baby should be fed on demand at least 8 times in 24 hours | 1.13 | 0.46 |
| A child must not be given breast milk when he has diarrhea | 1.09 | 0.45 |

Items were reverse coded.Legend for Overall Attitude: 1.0 – 1.74 Very Negative; 1.75 – 2.49 Negative; 2.50 – 3.24 Positive; 3.25 – 4.0 Very Positive***Table 6***Extent of the Lifestyle Practices During the First 1000 Days*

| Items | M | SD |
|--|------|------|
| I take iron-folic acid supplements prescribed by my doctor/nurse/midwife for 180 days during my pregnancy. | 3.82 | 0.44 |
| I go for an antenatal check-up for at least 4 visits to the barangay health station, hospital, or doctor's clinic. | 3.79 | 0.57 |
| I give my child micronutrient supplements such as vitamin A | 3.73 | 0.57 |
| I monitor my child's growth weight and height monthly. | 3.71 | 0.59 |
| I practice exclusive breastfeeding until 6 months | 3.58 | 0.82 |
| I maintain a healthy weight during my pregnancy. | 3.48 | 0.83 |
| I limit the screen time for my child to less than 1 hour per day. | 3.41 | 0.90 |
| I refrain from smoking | 3.39 | 1.17 |
| I ensure that my child eats 1-2 medium servings per day of fruit and 1/3 to 1/2 cup per day of vegetables | 3.26 | 0.88 |
| I take enough sleep of 8 hours during my pregnancy. | 3.03 | 0.82 |
| I exercise at moderate intensity as prescribed by my doctor, nurse, or rural health midwife during my pregnancy | 2.98 | 0.99 |
| I use Pinggang Pinoy as a guide in planning a balanced diet for my child. | 2.96 | 1.04 |
| I refrain from giving my child sweetened beverages like soda and fruit juices. | 2.93 | 1.22 |

{table continues on the next page}

| | | |
|---|------|------|
| I eat fatty foods when I was pregnant. | 2.18 | 0.98 |
| I always treat my child in fast food restaurants as a reward for him. | 1.86 | 1.03 |
| I eat more sweets like cakes, soda and chocolates when I am pregnant. | 1.74 | 0.85 |
| I drink alcoholic beverages when I was pregnant. | 1.29 | 0.78 |

Overall Practice: $M=3.00$, $s=0.33$ (Good)

Legend for Overall Practice: 1.0 – 1.74 Poor; 1.75 – 2.49 Fair; 2.50 – 3.24 Good; 3.25 – 4.0 Very Good

The extent of the IYCF practices among participants in Table 7 shows an overall fair practice with a mean of 2.29, $s=0.29$. Epidemiological studies identify inadequate complementary feeding as one of the key underlying causes of stunting in early life (Capanzana et al., 2020). The prevalence of not providing prelacteal meals during the first three days of life decreased the incidence of stunting (Guirindola et al., 2020). Additionally, an untimely introduction of complementary meals raised the likelihood of stunting almost twofold and of severe stunting by more than four times (Guirindola et al., 2020).

Table 7
Extent of the Infant and Young Child Feeding

| Profile | Frequency | Percent |
|--|-----------|---------|
| <u>Initiation of Breastfeeding</u> | 1 | 1.0 |
| Never | 38 | 38.0 |
| More than 1 hour after delivery | 61 | 61.0 |
| Immediately, 1 hour after delivery | | |
| <u>Drinks given to infant 3 days after delivery</u> | | |
| Other Drinks | 3 | 3.0 |
| Infant Formula | 20 | 20.0 |
| None | 77 | 77.0 |
| <u>Duration of Breastfeeding</u> | | |
| Never | 1 | 1.0 |
| 6 months or less | 45 | 45.0 |
| more than 6 months | 54 | 54.0 |
| <u>Complementary Feeding</u> | | |
| 1 kind of food only | 76 | 76.0 |
| 2-3 kinds of food given | 20 | 20.0 |
| more than 3 kinds of food given | 4 | 4.0 |
| Overall Infant and Young Child Feeding Practices: $M=2.29$, $s=0.29$ (Fair) | | |

Verbal Interpretation for Overall Score: 1.0 – 1.6 Poor; 1.7 – 2.3 Fair; 2.4 – 3.0 Optimal

Study findings show that many of the mothers (93%) were aware of supplementary feeding in the barangay and are willing to participate in this program in their community. In randomized control experiments conducted in Jamaica, China, and Ecuador, the addition of animal-sourced foods such as high-protein milk, minced pork, and eggs were added to children's regular meals

shown that the treated children had grown taller than the control group (Capanzana et al., 2020). The findings revealed the importance of adding animal-sourced foods (ASFs) to the stimulation of early childhood growth (Capanzana et al., 2020).

Table 8.

Extent of Supplementary Feeding Participation

| Are you participating in supplementary feeding in your barangay? | Frequency | % |
|--|-----------|------|
| Yes | 93 | 93.0 |
| No | 7 | 7.0 |

The results of the Spearman rho correlation to determine the factors associated with lifestyle practices are shown in Table 9. In terms of lifestyle practices during the early years of the child's life, attitude ($r=.229$, $p=.022$) and supplementary feeding participation ($r=-.234$, $p=.019$) are significantly associated with lifestyle practices. Attitude has a weak, positive association with healthy lifestyle practices. This means that a more positive attitude is related to a better healthy lifestyle practice. Supplementary feeding has a weak, negative association with healthy lifestyle practices. Not giving supplementary feeding to children is more likely among those with better practices.

Table 9

Factors Associated with Lifestyle Practices During the First 1000 Days

| | Healthy Lifestyle Practice | | |
|--------------------------------|----------------------------|------|-----------------|
| | r_s | p | VI |
| Knowledge | .007 | .947 | Not Significant |
| Attitude | .229* | .022 | Significant |
| Infant and Young Child Feeding | -.125 | .217 | Not Significant |
| Supplementary Feeding | -.234* | .019 | Significant |

*Significant at 0.05 level of significance; r_s – Spearman rho correlation

aSupplementary Feeding is coded 1(Yes) and 2(No)

Table 10 shows the association of stunting with knowledge, attitude, IYCF, and supplementary feeding participation. Study findings show that knowledge, attitude, IYCF, and supplementary feeding participation are not significantly associated with stunting ($p > .05$). Furthermore, there is no significant difference in the growth of the child considering demographics ($p>0.05$) like age, educational attainment, work status of the mothers, and the family monthly income as shown in Table 11. Table 12 presents the results of the study that there is no significant difference in healthy lifestyle practices when considering the demographics ($p > 0.05$).

Table 10

Factors Associated with Stunted Growth in Children Under Five Years

| | Height to Age Ratio | | |
|------------------------------------|---------------------|------|-----------------|
| | r_s | p | VI |
| Knowledge | -.009 | .929 | Not Significant |
| Attitude | .128 | .203 | Not Significant |
| Infant and Young Child Feeding | -.064 | .530 | Not Significant |
| Supplementary Feeding ^a | .053 | .603 | Not Significant |

r_s – Spearman rho correlation; ^aSupplementary Feeding is coded 1(Yes) and 2(No)

Table 11
Differences in Stunting by Moderator Variables

| Profile | N | Mean Rank | Test Statistics ^{a, b} | p | VI |
|-------------------------------|----|-----------|---------------------------------|--------------|------------------------|
| <u>Age</u> | | | <u>636^a</u> | <u>0.792</u> | <u>Not Significant</u> |
| 18-34 | 82 | 49.26 | | | |
| 35 and above | 16 | 50.75 | | | |
| <u>Educational Attainment</u> | | | <u>5.148^b</u> | <u>0.076</u> | <u>Not Significant</u> |
| Elementary | 10 | 35.9 | | | |
| High School/Vocational | 71 | 51.04 | | | |
| College/Post Grad | 18 | 53.72 | | | |
| <u>Work Status</u> | | | <u>710^a</u> | <u>0.733</u> | <u>Not Significant</u> |
| Working | 18 | 48.94 | | | |
| Not Working | 82 | 50.84 | | | |
| <u>Family Monthly Income</u> | | | <u>0.030^b</u> | <u>0.985</u> | <u>Not Significant</u> |
| 8,000 and below | 59 | 49.24 | | | |
| 8,001-15,000 | 25 | 49.68 | | | |
| 15,001-30,000 | 14 | 50.29 | | | |

^aMann Whitney U Test; ^bKruskal Wallis H Test

Table 12
Differences in Healthy Lifestyle Practices by Moderator Variables

| Profile | N | Mean Rank | Test Statistics ^{a, b} | p | VI |
|-------------------------------|----|-----------|---------------------------------|--------------|------------------------|
| <u>Age</u> | | | <u>577^a</u> | <u>0.446</u> | <u>Not Significant</u> |
| 18-34 | 82 | 50.46 | | | |
| 35 and above | 16 | 44.56 | | | |
| <u>Educational Attainment</u> | | | <u>5.976^b</u> | <u>0.050</u> | <u>Not Significant</u> |
| Elementary | 10 | 46.3 | | | |
| High School/Vocational | 71 | 46.74 | | | |
| College/Post Grad | 18 | 64.92 | | | |
| <u>Work Status</u> | | | <u>725.5^a</u> | <u>0.91</u> | <u>Not Significant</u> |
| Working | 18 | 51.19 | | | |
| Not Working | 82 | 50.35 | | | |
| <u>Family Monthly Income</u> | | | <u>1.661^b</u> | <u>0.436</u> | <u>Not Significant</u> |
| 8,000 and below | 59 | 47.99 | | | |
| 8,001-15,000 | 25 | 48.00 | | | |
| 15,001-30,000 | 14 | 58.54 | | | |

^aMann Whitney U Test; ^bKruskal Wallis H Test

The results of this study on risk factors for stunting were unexpected given the considerable amount of evidence demonstrating the positive association between knowledge, attitude, IYCF, supplementary feeding participation, and demographic variables like age, education, working status, and family income. The small sample size of children in the study may not have allowed for sufficient power to detect differences in child stunting compared to a larger study. In addition, the findings of this study validate that childhood stunting is multifactorial. A complex system of interconnected elements governs the predictors of suboptimal growth and development patterns among children. For example, a study on Marinduque Island found that access to safe water supply and sanitary toilet facilities were identified to be factors affecting child undernutrition (Salvacion, 2017). The study also discovered that malnutrition in the area was significantly yet slightly impacted by the distance to the provincial highway (Salvacion, 2017). Likewise, Capanzana et al. (2020) emphasized that the diversity and interconnectedness of the possible causative pathways for stunting carry at least three implications. First, certain elements that impact one's stunted development might not apply to another. Second, stunting may not necessarily be prevented by the presence of one driver (such as exclusive breastfeeding) in the absence of another driver (for example, poor maternal health). This suggests that there could be a set of factors that are required for normal growth and that the existence of other drivers cannot replace them. Lastly, stunting is cyclical. Many studies have demonstrated a connection between mother anthropometry and child stunting.

This study explores the possible determinants of stunted growth among children in the early years of development in a barangay in Quezon province. The findings of this study show the multifaceted nature of stunting problems throughout the critical first 1000 days. The research suggests examining additional variables that may be contributing to child growth faltering such as dietary diversity, environmental factors, and other variables that affect a child's development during the pre-and post-natal phase. The results also suggest that a multi-sectoral approach is required to address the various underlying causes of stunting in early childhood in the community and that no single intervention can solve the complex issues of stunted growth among young children.

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NURSES' ROLES PERFORMANCE AND QUALITY OF LIFE DURING THE COVID-19 PANDEMIC

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Abstract

The COVID-19 pandemic weakened the healthcare system worldwide and made nurses experience emotional, psychological, and physiological fatigue, which is believed to affect their role performance somehow. The study was conducted to determine the nurse's role performance and quality of life during the COVID-19 pandemic. This study employed a descriptive-evaluative, descriptive-correlational, and descriptive-comparative research design. A total of 117 registered nurses working in varying positions and clinical areas, working for six months and above in three private hospitals regardless of age and marital status, were purposively sampled. A literature-based questionnaire was used as a survey tool. Experts validated the tool, and its reliability was established. The study found that nurses have a *very high* level of performance in performing their duties and responsibilities to their patients, significant others of patients, co-nurses, and other health care providers, and the nurses' role performance relating to their superiors was also *high*. The overall level of role performance of the nurses is *very high*. Also, the nurses had a *high* quality of life considering their general, social, emotional, and functional well-being. Meanwhile, considering their physical well-being, an average quality of life is considered. Their role performance towards their patients ($p = .000$; $r = .384$), superiors ($p = .000$; $r = .383$), co-nurses ($p = .000$; $r = .353$) and other health care providers ($p = .001$; $r = .314$) were significantly related to their quality of life, but not with significant others. This means that the higher the nurses' role performance level, the better the quality of their lives. The age, number of years of working experience, position, area of assignment, and hospital of employment did not significantly make a difference in their quality of life. Their marital status ($p = .042$) and their gender ($p = .031$; $z = -2.160$) made a significant difference in their quality of life during the COVID-19 pandemic. Those married and male have better quality of life than those singles and are females. The hospital administrator must provide opportunities and an environment for nurses to perform their roles appropriately. It is also important for nurses to look into the physical well-being of the nurses so their quality of life will be enhanced.

Keywords: *nurses' role performance, quality of life of nurses, covid-19 pandemic*

Nurses are the pioneers in the best practices relevant to patient management and clinical safety. Their capacity and effectiveness thrived more during crises and even in infectious disease pandemics, such as COVID-19 (Buheji & Buhaid, 2020). Furthermore, prolonged work, similar to what a COVID-19 response nurse went through, can cause deterioration in performance. Role performance, as defined by Kozier et al., (2004), relates to what a person in a particular role does to the behaviors expected of that role. Nursing performance is an important measure of patient safety and productivity at work. Thus, changes in role performance may result in detrimental outcomes like medical errors and ineffective patient care (Sagherian, 2018).

On March 11, 2020, the World Health Organization declared a pandemic that affected the healthcare system, especially those who work in hospitals, because of many cases globally. The COVID-19 outbreak weakens the healthcare system and affects nurses experiencing emotional, psychological, and physiological fatigue (Lai et al., 2020). It was made clear that stress and burnout among healthcare professionals working during the COVID-19 pandemic had hurt their quality of life. In comparison, healthcare workers on the front line who are directly involved in the diagnosis, treatment, and care of patients with COVID-19 are at risk of developing psychological distress and other mental health symptoms (Lai et al., 2020). On the other hand, according to Buheji and Buhaid (2020), resilient nurses made a difference in many success stories during the war rounds with COVID-19. Their ability to cope was and still is so high, and their conviction, despite many challenges and circumstances, such as a shortage of staff and resources, made them unique in delivering care with compassion during a contagious disease.

The nurses' role is to deliver safe and quality patient care. According to Dolic et al. (2020), pressure was given to nurses at greater risk of infection. During the pandemic, they were more stressed because they faced a higher workload and intensity of their work and were forced to implement new protocols simultaneously.

Objective

This study aimed to determine the relationship between nurses' role performance and quality of life during the COVID-19 pandemic. The purpose of this is to know if the quality of life of nurses is affected by their role performance during COVID-19 pandemic as this situation overwhelms the healthcare system.

Methodology

Research Design

This study employed a descriptive-evaluative, descriptive-correlational, and descriptive-comparative research design. This is a type of non-experimental design used to describe relationships among variables. It was utilized in this study to investigate and describe the relationship between nurses' role performance and quality of life during the COVID-19 pandemic.

Population and Sampling Technique

The population of this study was comprised of 117 staff nurses and was selected through randomly selected purposive sampling from three Adventist hospitals. Registered nurses ages 20-55 who had worked in the general wards for six months and above, irrespective of their work status, gender, and marital status, were included in the study. Some nurses might only have been working in the study setting for six months but already have experience in the previous hospital where they used to work, so they are included in the study. A period of 1 week was given to the respondents to complete the questionnaire. A 98% response rate was achieved for data analysis.

Instrumentation

Self-constructed and modified test items conceptualized from literature and related studies were utilized to measure the nurse's role performance and quality of life. The survey questionnaire was divided into 3 sections. The Likert scale was employed to answer all the items in parts two to three. The *first* section intended to determine the personal data of the respondents, such as age, gender, marital status, position, years of experience in clinical assignment, and hospital.

The *second* part of the questionnaire contains information about nurses' role performance. To guide the researcher on the content of the role performance, the tool called "Six-Dimensional Scale of Nursing Performance" developed by Schwirian (1978) for public use was considered.

The *third* part of the questionnaire was used to measure the nurses' quality of life. To guide the researcher in developing nursing-related quality-of-life test items, the University of Portsmouth Quality of Working Life Research tool developed by the Department of Psychology was considered (QoWL 2018, Work-Related Quality of Life Scale). The main research questions were:

1. What is the level of nurses' role performance about patients, significant others of patients, superiors, co-nurses, and other health care providers?
2. What is the level of quality of life of nurses during the pandemic in terms of physical, social, emotional, and functional well-being?
3. Is there a significant relationship between the nurse's role performance and their quality of life?
4. Is there a significant difference in nurses' quality of life regarding their age, gender, marital status, years of experience, position, area of clinical assignment, and hospital?

Data Analysis

Mean, standard deviation and frequency distribution were used to determine the degree of the role performance and quality of life. Analysis of variance, T-test, and Mann-Whitney were used to analyze the differences in the quality of life when demographic variables such as age, gender, marital status, years of experience, position, area of clinical assignment, and hospital were considered.

Ethical Considerations

Ethical guidelines and maintenance of respondent's privacy were observed throughout the study by concealing their real names and identity. A code number was written on the questionnaire for each participant.

Results and Discussions

Level of Nurses' Role Performance

Table 1 describes the overall level of nurses' role performance, showing a grand mean of 4.51 (SD=0.38), which indicates that the nurses' role performance during the COVID-19 pandemic is very high. This result implies that the respondents have a positive relationship with the patient, significant others of the patient, superiors, co-nurses, and other healthcare providers to achieve feasible working conditions during a pandemic. Though the result is very high, they need to improve their collaborative relationship with their superiors as it helps achieve the patient's good status at the maximum level. Problems may be resolved if both parties actively coordinate the patient's status.

Table 1
Level of Nurses' Performance

| | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|---------------------------------------|--------|-----------|----------------------------|------------------------|
| Over-all Level of Nurses' Performance | 4.5134 | .38970 | Always | Very high |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never).

The previous study by Ardiç et al. (2022) supports the current result of the study, indicating that stress may affect healthcare workers' performance of their tasks and a positive relationship between motivation and performance. Thus, low motivation due to stress and work may also cause a decrease in performance. Another implication was found in the study conducted by Amarat et al. (2019) during the pandemic, nurses work more and are at increased risk; their motivation and performance are also reduced, and their stress levels are increased. These negative conditions among nurses negatively affect patient care. Furthermore, nurses are exposed to increased stress professionally and personally during the COVID-19 pandemic among outpatients.

Level of Nurses' Role Performance in Relation to Patients

Table 2 describes the nurses' role performance to their patients, showing a grand mean of 4.61 (SD=0.36), indicating that the nurses' performance to patients during the COVID-19 pandemic is very high. This result implies that the respondents are doing their duty to promote patients' right to privacy, including their immediate needs and safety.

Table 2

Level of Nurses' Performance: Patients

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|--|--------|-----------|----------------------------|------------------------|
| 1. Promote their rights to privacy. | 4.889 | .3156 | Always | Very high |
| 2. Identify and include their immediate needs in the plan of care. | 4.803 | .4778 | Always | Very high |
| 3. Explain to them before performing any nursing procedures. | 4.795 | .4650 | Always | Very high |
| 4. Ensure that they are able to understand to the best of their ability in Medications. | 4.752 | .5070 | Always | Very high |
| 5. Ensure that they are able to understand to the best of their ability on treatments. | 4.726 | .5667 | Always | Very high |
| 6. Give the necessary assistance prior to discharge. | 4.726 | .5354 | Always | Very high |
| 7. Perform technical procedures necessary for them like oral suctioning, tracheostomy care, IV therapy, catheter care, dressing changes. | 4.709 | .5580 | Always | Very high |
| 8. Promote the inclusion of their decision and desires concerning his/her care. | 4.641 | .6360 | Always | Very high |
| 9. Ensure that they are able to understand to the best of their ability on health status. | 4.598 | .6573 | Always | Very high |
| 10. Support their desire for full recovery by teaching them to avoid the risk | 4.590 | .6318 | Always | Very high |
| 11. Adopt teaching methods and materials appropriate for their need to make them understand health education and instructions. | 4.282 | .8392 | Often | High |
| 12. Help them meet his/her emotional needs. | 4.282 | .7173 | Often | High |
| 13. Recognize and meet the emotional needs of my dying patient. | 4.248 | .8701 | Often | High |
| Over-all Level of Nurses' Performance to Patient | 4.6187 | .36910 | Always | Very High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

Level of Nurses' Role Performance in Relation to Significant Others

Table 3 describes the level of nurses' role performance to significant others, showing a grand mean of 4.52 (SD=0.50), which indicates that the nurse's role performance to the family during the COVID-19 pandemic is *very high*. This result implies that the respondents are doing their duty to promote education and give emotional support and awareness of the patient's needs to their family during a pandemic.

Table 3

Level of Nurses' Performance: Significant Others of Patient

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|---|--------|-----------|----------------------------|------------------------|
| 1. Let them be aware of the needs of their patients. | 4.641 | .5487 | Always | Very high |
| 2. Teach them how to help the needs of their patients. | 4.581 | .6192 | Always | Very high |
| 3. Ensuring that they understand the support that their patient needs at home. | 4.573 | .6475 | Always | Very high |
| 4. Teach them a plan of care they can use at home when the patient is discharged to help their patient's continuous recovery. | 4.547 | .6885 | Always | Very high |
| 5. Give emotional support to them if they have a dying patient. | 4.274 | .8673 | Often | High |
| Over-all Level of Nurses' Performance to Significant Others | 4.5231 | .50572 | Always | Very high |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

Level of Nurses' Role Performance in Relation to Superiors

Table 4 describes the level of nurses' role performance to their superiors, showing a grand mean of 4.32 (SD=0.55), which indicates that the nurses' role performance to their superiors during the COVID-19 pandemic is *high*. This result implies that the respondents are doing their duty to coordinate with their immediate superiors on the necessary care of patients, have collaborative relationships as a team to promote the excellence of nursing service and recognize themselves as leaders.

Table 4

Level of Nurses' Performance: Superiors

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|--|-------|-----------|----------------------------|------------------------|
| 1. Coordinate plan of care and doctor's order according to the present condition of patient. | 4.761 | .5194 | Always | Very high |
| 2. Following their suggestions and guidance in situations that need modification in delivering the nursing care for safety purposes. | 4.675 | .5698 | Always | Very high |
| 3. Willingly accept assignment to patients with different levels of severity/acuity. anytime under the supervision of a team leader. | 4.658 | .6040 | Always | Very high |
| 4. Update them of the patient present condition. | 4.598 | .6830 | Always | Very high |
| 5. Reporting to them the: Clinical issues that need a decision of a nurse manager. | 4.427 | .9127 | Often | High |

{table continues on the next page}

| | | | | |
|---|--------|--------|-------|------|
| 6. Recognizing and praising their effort: For being available when needed during emergencies if there is lack of staff to assist. | 4.274 | .9156 | Often | High |
| 7. Recognizing and praising their effort: In providing a balance scheduling for nurses. | 4.068 | 1.0806 | Often | High |
| 8. Recognizing and praising their effort: In providing training and seminars needed by the nurses. | 4.034 | .9994 | Often | High |
| 9. For prioritizing the welfare of nurses by not assigning patients more than nurses can handle | 4.009 | 1.0867 | Often | High |
| 10. Reporting to them the: conflicts with colleagues identified to affect our working environment. | 3.795 | 1.2699 | Often | High |
| Over-all Level of Nurses' Performance to Supervisors | 4.3299 | .55666 | Often | High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

Level of Nurses' Role Performance in Relation to Co-Nurses

Table 5 describes nurses' role performance towards their co-nurses, showing a grand mean of 4.59 (SD=0.48), which indicates that the nurse's role performance to Co-nurses during the COVID-19 pandemic is *very high*. This result implies that the respondents are responsible for helping other co-nurses achieve their patients' goals during the COVID-19 pandemic.

Table 5

Level of Nurses' Performance: Co-Nurses

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|--|--------|-----------|----------------------------|------------------------|
| 1. Offer an assistance in times of emergency situations. | 4.769 | .4430 | Always | Very high |
| 2. Accept the task they delegate to me. | 4.709 | .4745 | Always | Very high |
| 3. Taking initiative in attending to the needs of the patients assigned to my co-nurses when they are not available. | 4.641 | .5487 | Always | Very high |
| 4. Coordinate the plan of care with them, that may contribute to patient recovery. | 4.615 | .7173 | Always | Very high |
| 5. Update them of the status and include them in planning for the care of our patients | 4.521 | .7381 | Always | Very high |
| 6. Evaluate with them the results of our nursing care every shift. | 4.299 | .9493 | Often | High |
| Over-all Level of Nurses' Performance to Co-Nurses | 4.5926 | .48465 | Always | Very high |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

Level of Nurses' Role Performance in Relation to other Health Care Providers

Table 6 describes the nurses' role performance to other Health care providers, showing a grand mean of 4.50 (SD=0.60), which indicates that the nurse's performance to other healthcare providers during the COVID-19 pandemic is *very high*. This result implies that the respondents have a good relationship to communicate, collaborate, and give the necessary information to reach the desired goal for the patient's well-being. Though very high, they need to improve coordination and evaluate the other necessary care for them.

Table 6
Level of Nurses' Performance: Other Health Care Providers

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|--|--------|-----------|----------------------------|------------------------|
| 1. Give them the patient information they need to give coordinated care, when necessary. | 4.709 | .6305 | Always | Very high |
| 2. Contribute to productive working relationship with them | 4.632 | .6512 | Always | Very high |
| 3. Collaborate with other members of the medical team to promote the best patient health outcomes. | 4.624 | .6660 | Always | Very high |
| 4. Coordinate the plan of patient care with the primary care provider of the physician. | 4.573 | .7348 | Always | Very high |
| 5. Seek their assistance when necessary | 4.564 | .6871 | Always | Very high |
| 6. Coordinate the plan of patient care with the Diagnostic/ Rehabilitation Departments | 4.385 | .8987 | Often | High |
| 7. Evaluate the plan of care with them. | 4.299 | .9583 | Often | High |
| 8. Coordinate the plan of patient care with the Dietary department. | 4.265 | 1.0537 | Often | High |
| Over-all Level of Nurses' Performance to other Health Care Providers | 4.5064 | .60146 | Always | Very high |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

Quality of Life of Nurses

Table 7 describes nurses' overall quality of life, showing a grand mean of 3.67 (SD=0.32), which indicates that the quality of life of nurses during the COVID-19 pandemic was *high*. This result implies that the respondents are satisfied with their social, emotional, and functional well-being.

Table 7
Overall Quality of Life

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|-------------------------|--------|-----------|----------------------------|------------------------|
| Overall Quality of Life | 3.6775 | .32685 | Often | High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

The previous study by Ding et al. (2022) supports the current result of the study, indicating that nurses' psychological experiences varied and faced many challenges. Although nurses still had different coping strategies, they needed support to meet the challenges. Another implication was found in the study conducted by Kackin et al. (2021): nurses were affected psychologically and socially during the pandemic; they used short-term coping strategies and needed psychological support and resource management. Furthermore, according to Demir & Şahin (2022), nurses experience physical, psychological, and social difficulties and negative emotions while caring for COVID-19 patients, and nurses use coping processes.

Quality of Life of Nurses as to Physical Well-being

Table 8 describes the nurses' quality of life in terms of Physical well-being, showing a grand mean of 3.47 (SD=0.53), which indicates that the nurses' quality of life during the COVID-19 pandemic is *average*. This result implies that the respondents are doing their duty to promote patient safety and necessary care during the pandemic. They do their work satisfactorily, but they sometimes feel ill after exhaustion due to exhaustion from long working hours (over time, need to report on a day off to replace the sick staff).

Table 8
Level of Quality of Life of Nurses: Physical Well-being

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|---|--------|-----------|----------------------------|------------------------|
| 1. I am able to do my job satisfactorily | 4.264 | .6351 | Often | High |
| 2. My current working hours/patterns suit my personal circumstances | 3.641 | .9141 | Often | High |
| 3. I have body pain after long hours of work | 3.530 | 1.0469 | Often | High |
| 4. I have exhaustion most of the time at work | 3.393 | .9465 | Sometimes | Average |
| 5. I am forced to spend time in bed | 3.017 | 1.1370 | Sometimes | Average |
| 6. I feel ill after exhaustion of work | 3.009 | 1.0463 | Sometimes | Average |
| Quality of Life: Physical Well-being | 3.4758 | .53885 | Sometimes | Average |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

In the previous study conducted by Ding et al. (2022), frontline nurses with COVID-19 had moderate to high fatigue, poor quality of care, and lower work satisfaction, which may affect the nurses' mental health and patient safety outcomes.

Quality of Life as to Social Well-being

Table 9 describes the level of nurses' quality of life in terms of social well-being, showing a grand mean of 4.21 (SD=0.63), which indicates that the nurse's quality of life during the COVID-19 pandemic is *high*. This result implies that the respondents are satisfied with their social well-being and get support from family, friends, and colleagues. Though often satisfied with their social support, their needs are restricted due to COVID-19 restriction policy.

Table 9
Level of Quality of Life of Nurses: Social Well-being

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|---|--------|-----------|----------------------------|------------------------|
| 1. I feel close to the person who is my main support. | 4.470 | .8364 | Often | High |
| 2. I am satisfied with my family communication. | 4.333 | .8510 | Often | High |
| 3. I get emotional support from my family | 4.316 | .9883 | Often | High |
| 4. I get support from my nursing colleagues. | 4.205 | .8360 | Often | High |
| 5. I get support from my friends. | 4.171 | .9495 | Often | High |
| 6. I feel close to my friends | 4.026 | .9690 | Often | High |
| 7. I am satisfied with my social life. | 3.949 | .8987 | Often | High |
| Quality of Life as to Social Well-being | 4.2100 | .63072 | Often | High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

In the previous study by Xu et al. (2021), nurses working during COVID-19 experienced psychological and emotional distress in coping with work demands, social relationships, and personal lives, which may affect the nursing outcome. Support is necessary to maintain the nurses' well-being.

Quality of Life as to Emotional Well-being

Table 10 describes the nurses' quality of life regarding emotional well-being, showing a grand mean of 4.21 (SD=0.63), which indicates that the nurses' quality of life during the COVID-19 pandemic is *high*. This result implies that the respondents are more stressed and worried that their families might get infected, and nurses never lose hope in fighting the pandemic.

Table 10

Level of Quality of Life of Nurses: Emotional Well-being

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|--|--------|-----------|----------------------------|------------------------|
| 1. I worry about my family to get infected | 4.094 | 1.1218 | Often | High |
| 2. Recently, I have been feeling reasonably happy when all things are considered | 3.718 | .9455 | Often | High |
| 3. I am satisfied with how I adopt to changes during this COVID pandemic | 3.556 | .8555 | Often | High |
| 4. I feel excessive level of stress at work | 2.991 | 1.0213 | Sometimes | Average |
| 5. I worry about getting Covid anytime | 2.906 | 1.2864 | Sometimes | Average |
| 6. I feel nervous with current changes at work and home. | 2.735 | .9948 | Sometimes | Average |
| 7. I feel under pressure at work | 2.709 | .9919 | Sometimes | Average |
| 8. Recently, I have been feeling unhappy and depressed. | 2.658 | 1.0681 | Sometimes | Average |
| 9. I worry that my condition will get worse | 2.496 | 1.1035 | Rarely | Low |
| 10. I am losing hope in the fight against the pandemic | 1.915 | .9963 | Rarely | Low |
| Quality of Life as to Emotional Well-being | 4.2100 | .63072 | Often | High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

The previous study by Zou et al. (2022) supports the current result of the study, indicating that nurses' responsibilities to care for patients are facing heavy workloads and high-risk emotional challenges. Another implication of the study conducted by Wildgruber et al. (2020) is that health professionals in direct contact with COVID-19 patients show higher stress levels than participants with no direct contact and that their main concerns are about the health of relatives, friends, and family. It was also found that work commitment decreased in connection to pandemic-related stress.

Quality of Life as to Functional Well-Being

Table 11 describes the level of nurses' quality of life in terms of functional well-being, showing a grand mean of 3.92 (SD=0.52), which indicates that the nurse's quality of life during the COVID-19 pandemic is *high*. This result implies that the respondents are satisfied with their functional well-being. Often, they can work regularly, use their skills and abilities, adapt to new working environments, and meet satisfaction, but in most ways, nurses' lives are not close to ideal. They have to sacrifice regular sleep and other activities that may be done in different time frames.

Table 11
Level of Quality of Life of Nurses: Functional Well-being

| Item | Mean | Std. Dev. | Equivalent Scaled Response | Qualitative Descriptor |
|---|--------|-----------|----------------------------|------------------------|
| 1. I am able to work regularly. | 4.462 | .6504 | Often | High |
| 2. I have the opportunity to use my abilities at work. | 4.342 | .6843 | Often | High |
| 3. I am encouraged to develop new skills. | 4.333 | .7543 | Often | High |
| 4. I can adopt to my new environment at work. | 4.222 | .7781 | Often | High |
| 5. My working conditions are satisfactory. | 4.145 | .7342 | Often | High |
| 6. I am able to enjoy life. | 4.111 | .8787 | Often | High |
| 7. I am involved in decision making that affect me in my own area of work | 3.974 | .9141 | Often | High |
| 8. I can handle stress easily | 3.906 | .7541 | Often | High |
| 9. I am satisfied with my overall quality of my working life | 3.889 | .8588 | Often | High |
| 10. I am enjoying the things I usually do for fun | 3.880 | .9840 | Often | High |
| 11. I am satisfied with the career opportunities available for me here | 3.838 | .8606 | Often | High |
| 12. I am satisfied with the training I receive in order to perform my present job | 3.795 | .8045 | Often | High |
| 13. I feel able to voice opinions and influence changes in my area of work | 3.778 | .8521 | Often | High |
| 14. My line manager actively promotes flexible working hours/patterns | 3.752 | .9992 | Often | High |
| 15. When I have done a good job, it is acknowledged by my line manager | 3.624 | 1.0399 | Often | High |
| 16. My employer provides me with what I need to do my job effectively. | 3.615 | .8987 | Often | High |
| 17. I am sleeping well. | 3.530 | 1.0633 | Often | High |
| 18. In most ways my life is close to ideal | 3.479 | .8469 | Sometimes | Average |
| Quality of Life as to Functional Well-being | 3.9264 | .52623 | Often | High |

Note: (4.50-5.00 = Always; 3.50-4.49=Often; 2.50-3.49=Sometimes; 1.50-2.49= Rarely/Seldom; 1-1.49 = Never)

In the previous study of Labrague and de Los Santos (2021), individual resilience strategies are efficiently used to reduce current distress and support short- and long-term adaptation and coping. Stress is a significant risk factor in a pandemic infectious condition, and increasing resilience can serve as a coping strategy.

Relationship of Nurses' Role Performance and Quality of Life

Table 12 shows that the relationship between nurses' role performance and quality of life, when taken as a whole, was found to be *significant* ($p= 0.001$) towards patients, superiors, co-nurses, and other health care providers; the direction of their relationship is positive. At the same time, there is *significant* relationship to the patient's significant others.

Table 12*Relationship of Nurses' Role Performance and Quality of Life*

| Nurse's Role Performance | Correlation Significance (2 tailed) | Quality of Life (p-value) | Descriptive Interpretation |
|------------------------------|-------------------------------------|---------------------------|----------------------------|
| Patients | .384 | .000 | Significant |
| Patient's Significant Others | .246 | .008 | Significant |
| Superiors | .383 | .000 | Significant |
| Co-Nurses | .353 | .000 | Significant |
| Other Healthcare Provider | .314 | .001 | Significant |

**Correlation is significant at the 0.01 level (2-tailed)

Babapour et al. (2022) state that job stress hurts the quality of life-related to nurses' health. It can also overshadow the performance of care and reduce such behaviors in nurses, which may be one-factor affecting patient outcomes. In the previous study by Layali et al. (2019), a high level of work-related stress would decrease the quality of life, and its reduction improves the quality of life.

Differences in the Quality of Life of Nurses

To determine if there were differences, a test on their age, gender, marital status, years of experience, position, area of assignment, and hospital on their quality of life when their demographic data were considered.

Gender

Table 13 shows that the difference in terms of gender, when taken as a whole, was found to be significant ($z = -2.160$ $p = .031$); males have a better quality of life than females.

Table 13*Differences in the Quality of Life of Nurses: Gender*

| Gender | N | Mean Rank | Sum of Ranks | U-value | Z | p-value | Verbal Interpretation |
|--------|----|-----------|--------------|----------|--------|---------|-----------------------|
| Male | 33 | 69.80 | 2303.50 | 1029.500 | -2.160 | .031 | Significant |
| Female | 84 | 54.76 | 4599.50 | | | | |

*Significant at 0.05

The male has a better quality of life than the female because male nurses suffer from short-term negative emotions and can quickly adapt to the crisis (Zhou et al. (2021).

Age

Table 14 shows that age was not significant in the quality of life of nurses during the COVID-19 pandemic between the group and within the group ($f = .876$ $p = 0.682$).

Table 14*Differences in the Quality of Life of Nurses: Age*

| Gender | N | Mean Rank | Sum of Ranks | U-value | Z | p-value |
|----------------|--------|-----------|--------------|----------|--------|---------|
| Between Groups | 19.729 | .420 | 47 | 1029.500 | -2.160 | .031 |
| Within Groups | 33.057 | .479 | 69 | | | |
| Total | 52.786 | | 116 | | | |

*Significant at 0.05

Marital Status

Table 15 shows that marital status was significant to the quality of life of nurses during the COVID-19 pandemic, having a mean of 3.68 ($T = -2.66$, $p = 0.042$) for married nurses and single ($M = 3.67$).

Table 15

Differences in the Quality of Life of Nurses: Marital Status

| Marital Status | Mean | SD | t-value | df | p-value | Verbal Interpretation |
|----------------|--------|--------|---------|-----|---------|-----------------------|
| Single | 3.6725 | .35456 | -.257 | 113 | .042 | Significant |
| Married | 3.6886 | .29216 | -2.66 | 109 | | |

*Significant at 0.05

Years of Experience

Table 16 shows that years of experience were *not significant* in nurses' quality of life between the group and within the groups ($f = 1.276$, $p = 0.176$).

Table 16

Differences in the Quality of Life of Nurses: Years of Experience

| Years of Experience | Sum of Squares | Mean Square | df | F | p-value | Verbal Interpretation |
|---------------------|----------------|-------------|-----|-------|---------|-----------------------|
| Between Groups | 24.236 | .516 | 47 | 1.276 | .176 | Not Significant |
| Within Groups | 27.883 | .404 | 69 | | | |
| Total | 52.120 | | 116 | | | |

*Significant at 0.05

Position

Table 17 shows that position was *not significant* in the quality of life of nurses among staff nurses and managers ($z = 6111.500$, $p = 0.872$).

Table 17

Differences in the Quality of Life of Nurses: Position

| Gender | N | Mean Rank | Sum of Ranks | U-value | Z | p-value | Verbal Interpretation |
|---------------|-----|-----------|--------------|---------|----------|---------|-----------------------|
| Staff Nurse | 104 | 58.82 | 6117.50 | 657.500 | 6111.500 | .872 | Not Significant |
| Nurse Manager | 13 | 60.42 | 785.50 | | | | |

*Significant at 0.05

Area of Assignment

Table 18 shows that the area of the assignment was *not significant* in the quality of life of nurses between the group and within the group ($F = 1.549$, $p = 0.058$).

Table 18*Differences in the Quality of Life of Nurses: Area of Assignment*

| Area of Assignment | Sum of Squares | Mean Square | df | F | p-value | Verbal Interpretation |
|--------------------|----------------|-------------|-----|-------|---------|-----------------------|
| Between Groups | 749.029 | 15.937 | 47 | 1.549 | .058 | Not Significant |
| Within Groups | 709.757 | 10.286 | 69 | | | |
| Total | 1458.786 | | 116 | | | |

*Significant at 0.05

Hospital

Table 19 shows that the hospital was *not significant* in the quality of life of nurses ($M = -.341$, $p = 0.347$).

Table 19*Differences in the Quality of Life: Hospital*

| Hospital | Sum of Squares | Mean Square | df | F | p-value | Verbal Interpretation |
|----------------|----------------|-------------|-----|-------|---------|-----------------------|
| Between Groups | 16.007 | .341 | 47 | 1.106 | .347 | Not Significant |
| Within Groups | 21.240 | .308 | 69 | | | |
| Total | 37.248 | | 116 | | | |

*Significant at 0.05

The previous study of Tamarit et al. (2023) supports the current result of the study, indicating that resilience helps reduce symptoms of anxiety, depression, and stress, as well as life satisfaction. This was equally interplayed between males and females across different ages. Another implication was found in the study by Zhou et al. (2021), which found that newly recruited male nurses suffering from short-term negative emotions can quickly adapt to the crisis.

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QUALITATIVE STUDY ON THE PERCEPTIONS OF THE USE OF NURSING INFORMATICS AMONG PHILIPPINE NURSES WORKING ABROAD

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Abstract

Within the context of a global village, many nurses from the Philippines have fanned out and emigrated to countries where digitized healthcare has been integral in their delivery, particularly the use of nursing informatics. Using a descriptive qualitative design, this study explores the perceptions of Philippine nurses towards their use of nursing informatics in the health facilities where they work abroad. A series of semi-structured interviews were conducted via Zoom with seven participants from varied nursing backgrounds, scattered all over the world. Thematic analysis of their responses shows Philippine nurses perceive nursing informatics use in their practice abroad as a collection of inexhaustible data, an avenue for feedback between nurses and software designers, a health service giving patients freedom in their care management, remarkably easy to use, portable and accessible information, and a network providing interconnectivity between health workers. Respondents also report challenges with the use of nursing informatics such as data vulnerability, computer literacy, especially for older nurses, and opportunities for professional growth in nursing informatics. In conclusion, the experiences of Philippine nurses with nursing informatics abroad provide them with opportunities and challenges in their practice that appear in step with the current global digital atmosphere. This study has also shown that nursing informatics brings out the adaptability of Philippine nurses towards new work environments. The researcher recommends that nursing informatics be included in the Philippine nursing education curriculum to better prepare Philippine nurses should they work abroad.

Keywords: *Philippine nurses, nursing informatics, descriptive qualitative design*

Technology has dominated the healthcare landscape particularly in rich countries today and health informatics – which is the “intersection of information science, computer science, and health care” (Health Informatics: MS, n.d.) – has provided the quintessential tool for communication within healthcare, allowing healthcare providers the ability to deliver better care by easing their workload and centralizing client data in many health institutions worldwide. Nursing informatics, the nursing equivalent for the umbrella concept of health informatics, has revolutionised the way nurses manage their workloads and their patients, staying true to its definition by the American Nurses Association (2008): “Nursing informatics is the specialty that integrates nursing science with multiple information and analytical sciences to identify, define, manage and communicate data, information, knowledge and wisdom in nursing practice” (American Nurses Association, 2008). Nursing informatics pairs very well with nurses as they “have the most communication with patients, and interact with technology more frequently” (Darvish, Bahramnezhad, Keyhanian Navidhamidi, 2014) than any other healthcare professional group.

Rich countries that can afford to provide the infrastructure for nursing informatics in their healthcare, have made use of this digital communications pathway to alleviate the workload for their nurses. In healthcare facilities where they are utilized, nursing informatics has helped nurses care for patients safely, coordinate all their pertinent data, and provide more effective collaboration between members of the healthcare team (Nursing Informatics, 2021) than was possible before.

But just like many areas in health care, nursing informatics has its unique challenges. One of which is that it is essentially a relatively young field (Greenwood, n.d.), growing into more acceptability and synchronizing with the explosion of digital connectivity that is prevalent in the world today. The HIMSS survey conducted in 2020 showed that nursing informatics’ challenges include but are not limited to the following: “IT priorities, organizational structure, administrative support, staffing resources, and executive support or collaboration” (HIMSS Nursing Informatics Workforce Survey, 2020). While the latter list may sound exclusive to administrative positions in healthcare institutions, it still goes without saying that these complexities, prevalent and ever-evolving, continue to shape and characterize nursing informatics today.

Enter the Philippine nurses. As the world continues to become a global village, many nurses have fanned out from their countries of origin and emigrated to countries where nursing informatics or health informatics is integral in the host country’s healthcare delivery system. In many of these countries, Philippine nurses have comprised a significant portion of their host country’s nurse workforce (Econar, 2021; Dass, 2020; Khor, 2019). As one of the biggest human resources for nursing pumped out into the world (Morales, 2021), these Philippine nurses bring their excellent work ethic, skills, and compassion into many labor environments they are placed. However, these nurses also come into these foreign health facilities with little to no exposure to nurse informatics from the Philippines. It is rather interesting that in the Philippines – one of the world’s major suppliers of nurses (Morales, 2021) – nursing informatics has been a relatively novel concept that has not made a significant impact on either nursing education or the local healthcare industry (Faustorilla, 2020). With very little nursing informatics training or exposure in their motherland, these Philippine nurses arrive in these host countries and are quickly initiated into a work environment that may be drastically different from the Philippines, including the use of nursing informatics at these workplaces. That is notwithstanding other new challenges these nurses must face when they relocate (Pung & Goh, 2016), such as culture shock, for example.

During this pandemic, nursing informatics has come to the forefront and allowed for convenience in healthcare delivery during an otherwise disruptive time (Wu, 2021). This perhaps signals the flourishing of nursing informatics as a vital, if not preeminent, tool in the so-called new normal following the pandemic and a foreshadowing of its ubiquity in the healthcare landscape soon. In like manner, Philippine migrant nurses have risen to the challenge of this pandemic (Morton, 2021). But while much research has been steadily conducted to see the evolution of nursing informatics

in its acceptance, prevalence, and impact on the practice and education of the general population of nurses, there appears to be a scarcity of qualitative studies exploring the perceptions of Philippine nurses towards their use of nursing informatics in the health facilities they work in abroad. This is the gap this study is trying to fill.

Statement of the Problem

This study aims to qualitatively study the perceptions of the use of nursing informatics among Philippine nurses working abroad. It seeks to answer the following questions:

1. What are the perceptions of Philippine nurses working abroad regarding the use of nursing informatics?
2. What are the advantages of using nursing informatics in the practice of Philippine nurses working abroad?
3. What are the disadvantages of using nursing informatics in the practice of Philippine nurses working abroad?
4. What skills have Philippine nurses acquired after having used nursing informatics in their practice abroad?

Significance of the Study

The researcher hopes this study benefits the following:

The Public Who Avails of Nursing Informatics in Their Healthcare

The researcher hopes that this study causes the public to realize and appreciate the Philippine nurses behind the use of nursing informatics in their healthcare. The public needs to understand that, while it may seem as if their care is digitized and therefore may feel impersonal, the goal of these services is to give them the best care by using these systems. They also need to realize that while it may be true that nursing informatics is here to stay, nothing replaces the humanity and personality of nurses who deliver and oversee their care.

Policymakers

The researcher hopes that policymakers, both in the Philippines and in host countries where Philippine nurses are deployed, understand the need to actively support nursing healthcare delivery systems that use nursing informatics. The researcher hopes that these policymakers understand the economics and the needed infrastructure to set up nursing informatics in local health facilities. In addition, the researcher also hopes policymakers involve themselves and champion the cause of migrant nurses, especially from the Philippines, to understand that these nurses work hard, have a natural adaptability to new work situations, and agility to learn digitized care delivery even without the training from their nursing schools and work environments back home, and they infuse into their work unique characteristics that make for a richness in the healthcare experience of patients.

Leaders of Health Institutions

The researcher hopes that leaders of health institutions understand the complexity of acquiring digitized healthcare systems, maintaining their optimal functioning, and supporting the nurses who must execute the pathways coming from these systems. These leaders must support the training and continuing education needed especially for Philippine nurses as they use nursing informatics in their practice, and to allow for their mastery and skill-building. They must also work hand in hand with these nurses in the evaluation of the usefulness or lack thereof in the use of nursing informatics, as technology in healthcare evolves at a fast pace.

Informatics Software Designers

The researcher hopes that the results of this study impact the practice of software designers themselves who create systems to ease work-related burdens upon the nurses they serve. The researcher hopes that active collaboration be exercised between nurse users and themselves as creators, even supporting the idea of more nursing representation in the design of these software.

Nurse Educators

Whether in the Philippines or in the countries where Philippine nurses are sent to work, nurse educators must seriously consider training aspirant nurses in nursing informatics at the outset. Nurse educators must also reconcile the interrelationship between humanity and technology in the delivery of healthcare with regards to educating nurses about nursing informatics, and that it is imperative not to lose the ‘human touch’ when using digital elements in healthcare.

Nurses

The researcher hopes this study helps nurses realize the significance of nurse informatics in their practice because it is bound to stay for an indefinite amount of time moving forward. Older nurses and young nurses must create a community of symbiosis, assisting one another and providing each other feedback on the use of nursing informatics in their practice. The researcher hopes that Philippine nurses appreciate their adaptability, their resilience, and their fortitude as they deliver care using nursing informatics in countries outside the motherland. The researcher hopes that Philippine nurses realize that they are active participants in shaping the nursing informatics landscape wherever they work.

Researchers

The researcher hopes that the results of this study inform research and add to the pool of knowledge surrounding nursing informatics and Philippine nurses. The researcher also hopes that more qualitative studies be conducted regarding the experiences of Philippine nurses and nursing informatics, where now there isn’t much to be had.

Scope and Limitation of the Study

The researcher hopes to qualitatively uncover the perceptions of Philippine nurses regarding their use of nursing informatics in their practice abroad. Criteria for respondents to qualify will be the following: Philippine nurses who are currently working outside the Philippines; they must be currently working in health facilities in these countries for at least 2 years; health facilities where they work must be currently using nursing informatics in their health delivery system; these nurses must have actively perused of nursing informatics in their practice, within the last year at least; nurses who are nurse informaticists themselves are preferred, but non-specialty nurses may qualify providing they meet the preceding criteria.

The researcher anticipates that the results of this study may not be generalizable as respondents would be very limited, and because it is qualitative, perceptions and insights will be subjective and unique to the respondent. Also, the respondents will be recruited via purposive sampling, therefore respondents will have been acquainted with the researcher and an element of over-familiarity and therefore natural bias might taint responses. Because this study is conducted during a pandemic, the researcher anticipates responses that might not necessarily be elicited if this study were conducted before the pandemic. Each Philippine nurse has a unique story to tell, and because of this the researcher fully understands that a response by one Philippine nurse will not necessarily be like that of another Philippine nurse.

Review of Literature

The literature gathered for this review has not been quite exhaustive in terms of studies related to Philippine nurses – or immigrant nurses for that matter – about nursing informatics. However, several studies show features that the researcher finds fascinating regarding nurses' experiences in their use of nursing informatics, although these may not necessarily completely be reported similarly by this study's respondents.

Perceptions of Nurses about Nursing Informatics

Studies (Alshammari et al., 2017; Ammenwerth & Hackl, 2019; Lee et al., 2019) put nurses' perspectives regarding nursing informatics at the fore. Two of them (Alshammari et al., 2017; Ammenwerth & Hackl, 2019) recommend nurses be afforded continuing informatics education for the duration of their practice. A study (Elewa & Guindy, 2017) with nursing students as respondents also recommends the same idea on top of a necessary integration of nursing informatics into the baccalaureate program. Two studies (Larson, 2017) (Shin et al., 2017) agree with the suggestion to infuse nursing education with nursing informatics, and one of them (Larson, 2017) comes from the context where nurse leaders were respondents, alluding perhaps to the fact that nurse leaders see the need for their nurses to be proficient in nursing informatics right at the start.

Perceived Advantages of Nursing Informatics by Nurses

The researcher was expecting nearly a uniformity of reports across the literature gathered for this topic. However, it is remarkable to find that each study viewed the benefits of nursing informatics from a variety of angles. Three studies (Bagot et al., 2019; Ho et al., 2019; Lee et al., 2017) inform about the ease of use of nursing informatics with two of them (Bagot et al., 2019; Ho et al., 2019) adding in the element of usefulness as reported by their respondents. One study (Lee et al., 2017) goes further to show that enjoyment – particularly in matters of satisfaction with electronic shift handover – was an important positive addition to the list of perceived advantages. Two studies (Bagot et al., 2019; Duding et al., 2018) show that nursing informatics provided an avenue for teamwork to thrive.

Perceived Disadvantages of Nursing Informatics by Nurses

Perceived disadvantages of nursing informatics use by nurses seem to report a common concept where, rather ironically, digitalized systems don't necessarily jive well with the needs of nurses. Lee et al. (2019) report that standardized nursing statements in digital systems don't allow for diverse patient conditions. Lee & Lee (2021) prefer semi-structured documentation while Duding et al. (2018) argue for customization. Further disadvantages, covered in one of these studies, are decreased patient care time, increased charting time, and respondents perceive disadvantages conflict with perceived advantages.

Nurse Competency in Nursing Informatics

Kleib & Nagle (2018) report that nurses who made use of nurse informatics obtain information and communication technology skills, but, quite remarkably, score low on professional regulatory accountability. Theirs and a study by Alshammari et al. (2017) agree that competence is an important quality in a nurse who must use nursing informatics. The researcher has found a study (Brown et al., 2020) that asserts that digital proficiency (i.e., nurses who have been educated or have extensive exposure to a variety of digital interfaces) makes for an ideal mix in the consumption of nursing informatics.

Medical Errors and Nursing Informatics

The researcher had anticipated numerous studies covering this topic but was unfortunately met by only one (Lee et al., 2017) which showed that research regarding medical errors with the use of nursing informatics had diminished. The reason for this perhaps is that most of the body of research regarding medical errors about nursing informatics may have already been covered in research prior to 2017. More recent research is concerned more with nurses' active involvement in the design and even the engineering of nursing informatics as technology progresses.

Nurse Involvement in Technology Design

This brings the researcher to this topic which according to two studies (Bagot et al., 2019; Vossebeld et al., 2019) must focus clearly on the users' – in these cases the nurses' – need. There is a need to enhance the nurse informaticists' continued professional education (Glasgow et al., 2018) to allow for their growth in this field alongside the changing demands of digital information technology in healthcare.

Immigrant Nurses and Health Information Technology

This section further reinforces the need to conduct this study if only to scratch the surface qualitatively, without even mentioning quantitative research. As of 2017, only one study was found (Guinyawan et al., 2019) that satisfies the exploration into perspectives and variables related to immigrant nurses concerning nursing informatics, which places Philippine nurses working abroad out of context altogether.

Methodology

Research Design

This research was designed to qualitatively study the perception of nursing informatics of Philippine nurses working abroad. The researcher used the descriptive qualitative method to explore the insights, opinions, and thoughts of Philippine nurses about nursing informatics. The descriptive qualitative method allowed the respondents in this study to verbalize these perceptions and a richer report regarding their experiences with the use of nursing informatics in their practice.

Population and Sampling Technique

The respondents were recruited via purposive sampling, to target Philippine nurses who were educated in their Bachelor of Science in Nursing degrees in the Philippines but have since emigrated outside the country and have come across nursing informatics or health informatics in their practice. The researcher had hoped the respondents would give a unique perspective as immigrant nurses from a country that relatively had no pervading nursing informatics infrastructure and to see their insights into a digitalized work environment in a country other than their motherland. The researcher sent three prospective respondents a message via Facebook messenger to see if they fell within the criteria for respondents or were willing to be interviewed. Three passed the criteria and were interested in being interviewed. Additionally, the researcher posted a status on Facebook to recruit Philippine nurses who were familiar with nursing informatics in their practice. Out of five who replied, two passed the criteria and were willing to be interviewed. Two respondents were secondary recruits, in that they were nominated by their friends who saw the researcher's post on Facebook.

Instrumentation

Because of the qualitative design of this study, the researcher was the instrument upon which qualitative data was elucidated from the respondents. The researcher conducted one-on-one Zoom interviews lasting from 30 minutes to a little over an hour with each of the seven respondents at

their suitable times, within a week. The respondents were asked a personalized version of the research questions:

1. What are the perceptions of Philippine nurses working abroad regarding the use of nursing informatics?
 - Personalized version: What are your perceptions regarding the use of nursing informatics in your practice as a nurse?
2. What are the advantages of using nursing informatics in the practice of Philippine nurses working abroad?
 - Personalized version: What are the advantages of using nursing informatics in your nursing practice?
3. What are the disadvantages of using nursing informatics in the practice of Philippine nurses working abroad?
 - Personalized version: What are the disadvantages of using nursing informatics in your nursing practice?
4. What skills have Philippine nurses acquired after having used nursing informatics in their practice abroad?
 - Personalized version: What skills have you acquired after having used nursing informatics in your practice?

Analysis of Data

The respondents' responses were analyzed thematically. During the process of interviewing, the researcher realized some of the questions asked by the respondents were poorly configured and caused some degree of ambiguity or confusion on the part of the respondent. Also, because the respondents freely spoke in their Filipino dialects, transcript responses were translated to the nearest idea in English and direct quotation was relatively hard to achieve. However, much substance was gleaned from the responses of the respondents to make for a comprehensive picture of the perceptions on the use of nursing informatics among Philippine nurses working abroad.

Ethical Considerations

Before the interview, the respondents were informed regarding the purpose of the study and that their privacy would be respected, and confidentiality upheld. Whereas the interviews were conducted via Zoom video calls, none of the respondents' identities have been used in this study and the respondents were assured that whatever they disclose will be held in confidence and that data in this study will not be traced to them. The respondents voluntarily engaged with the researcher and were in no danger of coercion nor of any malicious exchange during the study.

Results

These are the themes that emerged from the interviews conducted by the researcher to qualitatively study the perceptions on the use of nursing informatics among Philippine nurses working abroad.

Demographic Profiles

Seven respondents fit the criteria with five females and two males. They all received their Bachelor of Science in Nursing degrees in the Philippines from the late 1980s up to 2010. Five of the respondents are currently working in the United States of America, with work environments ranging from health visiting, travel nursing, acute care nursing, as well as being a nurse informaticist. One respondent worked in the Republic of Ireland, while another one worked in Australia. All respondents have been employed in their current stations for more than 2 years. Of the seven, one respondent reported having been exposed to nursing informatics or a form of health informatics

while working in the Philippines between 2005-2010, particularly in one of the Metro Manila area hospitals, before moving abroad.

Perceptions on the Use of Nursing Informatics among Philippine Nurses Working Abroad

Six of the respondents of this study shared that they encountered nursing informatics or health informatics a few years after emigrating abroad. This meant that they began incorporating informatics into their practice alongside local nurses as soon as their facilities began phasing out pen-and-paper charting, and therefore their experiences of the novelty of these systems would not have been as dissimilar as their local co-workers' experiences. One respondent shared that when they were offered the appointment, they said to themselves, "That's pretty easy. I know how to type." This implied an open-mindedness and sense of adventure to learn what one respondent refers to as "like learning a new language".

Four of the respondents shared that nursing informatics afforded them loads of data in one sitting. This meant that their health informatics infrastructure allowed their volumes of data to be accessed anytime and anywhere using various kinds of devices ranging from handheld to those pushed by trolleys to those that were attached to medical equipment at the bedside of patients. These devices were interconnected to a system specific to their facilities. Four respondents revealed that there was an active feedback system in place between nurse users and the software engineers designing these systems. One respondent said that they didn't want to go back to the pen-and-paper charting system as informatics has become their "default" or they have gotten so used to using the systems by now. Two respondents shared that they enjoyed using informatics while at work and that, according to one of them, it helped them to be "tech-savvy" and be from the younger and more computer-literate generation. One respondent reported that their national health system was going for a "paperless" approach to health delivery soon. Two respondents argue that IT (information technologists responsible for their informatics systems) are relatively out of touch with the needs of nurses who use their software. One of them remarked that they don't necessarily want nurses to be sole designers of software, but that there be a nurse representation at the designing level of these software.

Advantages of Nursing Informatics among Philippine Nurses Working Abroad

Themes that make up the perception of advantages of nursing informatics among Philippine nurses working abroad are the following: interconnectivity (five out of seven respondents) which means the ability to connect with patients or members of the healthcare team; interoperability (five out of seven respondents) of health services within their health facilities; ease of use (four out of seven); and portability and accessibility of information (four out of seven) as devices are regulated or issued by their health facilities.

The following responses were reported by three out of seven respondents: ability to sync devices (for example, heart monitors, pacemakers, scanning devices, etc.) by remotely managing them using informatics systems; ability to manage care of patients in rural or remote places, especially during the pandemic; ability to facilitate remote teaching for skills upgrading or orientating neophytes to digital interfaces; provides prompt and personalized feedback or alert systems (for potential medication errors, or for out of patient normal ranges, or appointment verifications).

One respondent attested to the benefit of nursing or health informatics as they remembered what happened during Hurricane Katrina which damaged huge areas, displacing numerous people in New Orleans, USA. According to this respondent: "healthcare continued for the victims because their records were online."

Disadvantages of Nursing Informatics among Philippine Nurses Working Abroad

Responses here were coming from four out of seven respondents, including the potential for breach of data by identity thieves or system hackers. One of the respondents reported that during the beginning of the pandemic, the national system that connected all health services within their country was hacked, causing major havoc in the delivery of services for a few months. Another major disadvantage reported by respondents was that older nurses had difficulty with using the systems. One respondent said that two of their older colleagues “quit their jobs” as they found it too cumbersome to learn these new digital formats.

A few responses were reported by three out of the seven respondents. One of these responses was the problem of energy reliance and one respondent commented on this area being very “costly” for electricity bills. While previously in the advantages section of this study, respondents reported “ease of use” of informatics in their nursing practice, these systems also took time off their bedside care for their patients, paradoxically. One of the respondents remarked that healthcare providers relied too heavily on the systems and that they become no longer personally familiar with the patient but potentially regard the patient as a statistic, which removes the unique personality of the patient. According to the same respondent, the manual system – or the pen-and-paper charting system – where you had to painstakingly write down the patient’s information allowed nurses to get to know the patient more in-depth. Another respondent remarks, “Sometimes we just hand the sheet for the patient to fill out or answer and then we input their answers in the computer which removes the nurse-patient bond that should have developed during their course in the unit.” Respondents also reported that nursing informatics was time-consuming, in that the pathways prescribed for in these systems are usually numerous to follow as they were designed to meet evidence-based protocols and not necessarily the needs of nurse users at the time they use them.

Skills Learned by Philippine Nurses Abroad Using Nursing Informatics

This section was found by the researcher to be porous and would make for a better-worded research question in the future if further research were undertaken. Four out of seven respondents argue that the skills they have learned were confined to navigating the system to become familiar with it. One respondent remarked that it wasn’t about the “use” of these systems but more about “navigating” them as their usefulness lies in the ability of the nurse user to confidently familiarize themselves with these systems and follow the pathways there. Another respondent remarked that learning the software allowed them to “spot glitches” so they could inform engineers how to upgrade or troubleshoot them. However, one respondent said that adapting to the system made them grow. The respondent explained: “Because of the clinical pathways health providers follow using health informatics, they can determine the progress and health management of the patient in their care. They make use of so many markers and sensitivity tests to chart the progress of their heart patients, for example. These pathways are unique to each facility.”

Thoughts Regarding Nursing Informatics in the Philippine Context

Respondents of this study believed that Filipino nurses have qualities in them that allow them to work very flexibly and ably anywhere in the world. One respondent remarked that the earlier the exposure to nursing informatics while studying nursing in the Philippines, the better to prevent “culture shock” once they ever emigrate to countries that have these systems in place in their health facilities. However, they also believed that while nursing informatics may be a good concept to introduce into the education of nurses in the Philippines, they were concerned about the digital and electronic infrastructure needed in Philippine hospitals for these nurses to be able to transfer what they learn into real life. One respondent suggested a basic requirement: “Have a computer system that speaks to each other”. This respondent also warned that information must be secure as Philippine hackers are notorious for being “very good” at what they do.

Discussion

This qualitative research was undertaken to study the perception of the use of nursing informatics among Philippine nurses working abroad. It sought to answer the following questions:

1. What are the perceptions of Philippine nurses working abroad regarding the use of nursing informatics?
2. What are the advantages of using nursing informatics in the practice of Philippine nurses working abroad?
3. What are the disadvantages of using nursing informatics in the practice of Philippine nurses working abroad?
4. What skills have Philippine nurses acquired after having used nursing informatics in their practice abroad?

Data gathered in this study show that Philippine nurses working abroad perceive the use of nursing informatics in their practice within the following contexts:

Collection of Inexhaustible Data

These data appear to be easily obtained at the click of a digital button by any nurse with the right training and with the authority to manage these data to optimize healthcare delivery or the safety of their patients. Data that is vast and easily retrievable appears to benefit greatly those who use and manage them appropriately within the healthcare setting (Hassan et al., 2018). Big data analytics, while exhaustive and easily accessed, also poses as a cryptic realm for nurses who cannot mine narrative and structure data and therefore need all the assistance to grow in this path for their good as well as the good of their patients (Ristevski & Chen, 2018; Topaz & Pruinelli, 2017).

Feedback Between Nurse Users and Software Designers

Nurse users report that there is a relatively healthy feedback mechanism between themselves and software designers, and this is especially utilized when there are complications in the use of specific software. It is worth noting that nurses prefer a representation of themselves at the designing level of this software because they are naturally the end users and software must meet their needs. Risling and Risling (2020) have observed that nurses seem to lack familiarity with design-thinking and associated practical experience in this area. The researcher believes that nurses only need the time and chance to grow in nursing or health informatics. As Amy Eagle (2016), writes how nurses are uniquely qualified, have influence, and are innovators in the care of their patients. It is a daily challenge for nurses to help create the best outcomes for their patients. As healthcare becomes more digitized, it is just logical to recruit nurses' unique perspectives in the realm of health informatics.

Interoperability of Health Services

Philippine nurses working abroad have recognized with amazement the interconnectivity of services because of nursing or health informatics. The healthcare facility has become a smaller and more accessible place for them to tap specific services within the facility to better care for their patients. Today, the trend has been heading towards a more patient-driven interoperability of health information and care services (Gordon & Catalini, 2018). June Kaminski (2018) recognizes this as an opportunity for nurses since it is a nursing mandate to support patient-focused care, patient-controlled health information is good news. A national focus on true patient empowerment and control over their health data fits this mandate beautifully (Kaminski, 2018).

Ease of Use

Nursing informatics have stood the test of time since its relatively recent arrival in health care facilities where they are utilized because of the ease of use they offer nurse users. Nurses who participated in this study reported this aspect of informatics in their practice. Although not overtly revealed in the data, the ease of use of nursing informatics largely depends on many causes including the nurse's personal experience with health informatics and their computer skills (Tubaishat, 2017). Of course, this would then mean that many nurses who are challenged by the use of computer interfaces would not find any ease of use in their experiences with nursing informatics. Perhaps further research should investigate the aspects of teamwork and collegiality in the context of nursing informatics where the more proficient software users stand as mentors for those who may lag in this regard.

Portability and Accessibility of Information

More and more people using web-enabled devices today have made use of internet applications to access health information. It is, therefore, no surprise that these features are prevalent within healthcare facilities that utilize nursing informatics or health informatics. Nurses in this study have attested to the portability of information with the use of nursing informatics as well as its accessibility, having accessed health information from their own hospital-issued devices to computer terminals they work with at their units or wards. With these concepts in mind, it is imperative to safeguard the data of patients from abuse or cyber theft. Dean Sittig and colleagues have developed a "key to-do list" (Sittig et al., 2018) to achieve this purpose, with the list including "identifying practices to safely manage information technology" (Sittig et al., 2018) of patients.

Interconnectivity

This study has shown that Philippine nurses working abroad have perceived interconnectivity as an essential element in their use of nursing informatics. Perhaps one of the greatest benefits of nursing informatics and/or health informatics is the idea of its interconnectivity particularly related to the recent pandemic where healthcare is made digitally available for patients who otherwise could not physically attend provider's appointments or present themselves in emergency rooms with non-severe symptoms. Interconnectivity has allowed providers the ability to reach their clients at their homes using the Internet and conduct healthcare in a relatively safe manner. Interconnectivity in nursing and health informatics has protected the most vulnerable of the population, particularly the elderly. It is imperative therefore that elderly patients be actively supported in their computer literacy (Constantini, Nihei & Ueno, 2021) so that they get the full experience of health care even amid this pandemic and moving forward.

Data Vulnerability

Philippine nurses recognize the vulnerability of data stored in nursing informatics. Respondents understood the enormous amount of data loaded into systems that are fertile ground for cyberhackers. Although respondents assumed that data particular to their healthcare facilities are well-protected by internal mechanisms, there still is a pervasive feeling of being careful with the use and management of data. A breach in data access happened recently in the host country of one of the respondents where hackers successfully infiltrated the national healthcare system's databases and wreaked havoc on services for several months. This was an aggravation superimposed over the challenges of the pandemic. It is imperative to keep safeguards in place for healthcare data (Seh et al., 2020). There perhaps will never be a time when data managers of any entity assume complacency regarding digital data, and nurses are better persons when they are vigilant with the management of data related to their patients.

Older Nurses and Computer Literacy

Data in this study has shown that more senior nurses are finding it more challenging to familiarize and navigate the informatics systems used in their healthcare facilities. This puts forth the idea of educational cohorts (Cohorts, 2013) where there appears to be an educational divide between nurses who were trained in computer literacy in their educational backgrounds and those who weren't. Those who weren't more than likely were from an older generation and were trained to be nurses as early as before the 1980s when nursing and health informatics were emerging in the healthcare delivery scene. This challenge for older nurses perhaps compounds already existing rifts between generational nurses but also balances the burden of work-related stress as older nurses have lesser stress compared to younger nurses in terms of psycho-social aspects of nursing care (Stevanin et al., 2018). The researcher proposes this to be an opportunity to foster teamwork and mentorship between generational nurses, helping each other where they struggle and spurring each other on.

Nurse Professional Growth with Nursing Informatics

Data gathered in this study shows that Philippine nurses admit to nominal professional growth vis-à-vis nursing informatics use, reporting that most of the skills learned were for them to familiarize themselves with the systems as quickly as possible. However, there seems to be a sense amongst them that if given the opportunity and continued digital education, they would grow more proficient in their use of these systems, regardless of how fast-paced the turnover of technology might be. This researcher believes that, because nursing informatics dominated healthcare delivery systems during this pandemic, it behooves policymakers, nursing leadership, and nurse educators to actively invest in continuing informatics education for their nurses. It is but the natural way forward. Research conducted by Ahmad et al., (2018) lays out comprehensive arguments and recommendations for keeping nurses astride with the pace of these digital times.

Conclusion

This qualitative research aimed to study the perceptions of the use of nursing informatics among Philippine nurses working abroad. It sought to answer the questions:

1. What are the perceptions of Philippine nurses working abroad regarding the use of nursing informatics?
2. What are the advantages of using nursing informatics in the practice of Philippine nurses working abroad?
3. What are the disadvantages of using nursing informatics in the practice of Philippine nurses working abroad?
4. What skills have Philippine nurses acquired after having used nursing informatics in their practice abroad?

This study found that Philippine nurses working abroad perceive the use of nursing informatics within the context of the following themes: that it is a collection of inexhaustible data, that there is a recognition of the feedback mechanisms between nurse users and software designers, that there is interoperability of health services, that there is the ease of use, that there is portability and accessibility of information, that linked devices provided interconnectivity within the healthcare team including the patient, that they are aware informatics data is vulnerable to cyber theft and abuse, that older nurses or users are challenged by its use, and that there is room for them to grow as nurses related to nursing informatics especially when allowed such growth. These findings may impact the public who avails of nursing informatics in their healthcare, policymakers, leaders of health institutions, informatics software designers, nurse educators, nurses, and researchers as they are made aware of the spectrum of perceptions Philippine nurses have towards the use of nursing informatics in their practice. Further research is recommended.

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WHAT MAKES NURSES STAY – THE CONJOINT ANALYSIS

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Abstract

The attrition of the nursing workforce has been one of the problems that have long challenged the nursing profession. This study aimed to recognize what will make nurses stay in their profession to create a supportive milieu that satisfies their preferences. Conjoint analysis was utilized to analyze the data to elucidate the nurses' inclinations. Attributes based on literature were clarified and tested for validity employing the orthogonal array and translated to conjoint sorts. Qualifications measure expected members to be licensed registered nurses engaged in their profession for a year. The corpus of the research was accumulated from 104 participants from primary hospitals in the Gingoog Bay Area and other Adventist Hospitals in Mindanao. According to the literature, four attributes characterize nursing retention: work-life balance, career development, working climate, and benefits. Of these attributes, work-life balance is the essential variable that makes nurses stay with a general significance of 40%, and conversely, career development is the least considered at 15.3%. Overall, the nurses preferred working conditions that prioritize work-life balance with high regard for shared governance and security of tenure that comes in the form of educational aids, housing incentives, car incentives, medical aides, and insurance. An excellent working climate fosters proactivity and career development by recognizing their strengths. Thus, the study recommends the mixture of these attributes according to the percentage will improve nurses' retention in their profession.

Keywords: *nurses, attrition rate, nursing workforce, conjoint analysis*

Nurses are a critical part of healthcare and make up the most significant section of the health profession. One of the essential current discussions in nursing is that nurses are leaving their careers (Androus, A., 2021; Curry, M., 2021; Letourneau, R., 2021). Researchers, such as the International Council of Nurses and the National Nurses Association, have investigated the intentions of nurses leaving their profession. Worldwide, nursing deficiency has been a well-recognized issue sometime recently the widespread.

In 2020, the primary State of the World's Nursing (SOWN) report, distributed by the World Well-being Organization (WHO), uncovered the worldwide nursing workforce was at 27.9 million and assessed a worldwide shortage of 5.9 million medical nurses. According to the World Health Statistics Report, around 29 million International Council of Nurses estimated that up to 13 million nurses would be required to fill the worldwide shortage deficiency, with 3.9 million people in the United States and the Philippines. The anticipated shortfall of nurses is expected to be 249,843 by 2030 unless more investment is made to hold them. Within the Philippine health sector, according to the World Health Organization Report State of the World's Nursing (2020).

The nursing profession confronts deficiencies due to a need for potential educators, high turnover, and inequitable workforce dissemination. The causes related to nursing deficiency are various and issues of concern (Duffield et al., 2014; Flinkman et al., 2010; Halter et al., 2014; Hayes et al., 2012; Kovner et al., 2014; Roche et al., 2015).

Most studies in this field focus on why nurses leave their profession. What is unclear is the best way to make nurses stay in their careers. Little is known about this study, and what factors will make nurses stay remain unclear. The study investigates the preferences of registered professional nurses' retention based on some potential reasons.

Literature Review

What Makes Nurses Stay

This literature review aims to describe the relevant studies on the management of working nurses. Specifically, the review asked: What are the best methods to make nurses stay in their profession? Preliminary research has shown that this material was generally scarce. Consequently, this study included existing literature relative to the management of nurses in a traditional hospital setting and other institutions. Since the literature review failed to find any current programs for the administration of medical nurses in any institution, the recommendations in this study are believed would strengthen the need and also help improve such programs.

The review of the literature included four parts. The first part involved describing literature on how work-life balance affects nurses. The study also examines reducing workload, sufficient staffing, and shared governance in managing nurses. The second part of the review literature is why career development should be a top priority for current nurses. The third part reviews the good working climate where managers and co-workers are proactive and the effects of good teamwork. Lastly, check the benefits for nurses, such as compensation and non-monetary benefits that affect their stay in their profession.

Attributes of Making Nurses Stay

Work-life balance

A recent study by Donley (2005) found that work-life balance can solve the emotional, physical, or mental exhaustion that happens because of overwork and burnout of nurses. (Aiken et al., 2001; Chalhoub et al., 2021; Poghosyan et al., 2010) confirmed that people leave their jobs for various reasons, but high stress is one of the most prevalent causes. Which only increases when hospitals have staff shortages. Current employees already work long shifts, but they'll end up working overtime when facilities are short-staffed. "You're working too hard, too much, or too long when you're overworked. That's an imposing number. So, what can we do? Astonished?" Work-life balance can be the solution to this issue (Indonesia, 2021).

Indonesia (2021) also mentions that work-life balance may allow individuals to oversee their time between work and individual lives. Work-life balance is fundamental since it influences our work and can make us more profitable since we are divided between work and personal life. Not as it were that: it's too great for our mental well-being. Work-life balance can diminish overwork within the work environment since you oversee your time by not doing everything simultaneously and instead focusing on doing it one by one. Not constraining yourself to do everything at once can assist you in maintaining a strategic distance from burnout, so it's excellent for your long-term efficiency. (Indonesia, 2021; Kholli, 2018). Work-life balance can be a perfect solution for making nurses stay in their profession.

Meulen (2019) theorizes that reducing workload can solve burnout which is the number one cause of why nurses leave their profession. Seaton (2020) and Human Factors (2021) agree. Several authors have found that reducing workload can reduce stress and burnout. Decreasing workload may require collaboration between representatives and their bosses. Significant participation between workers and managers is essential to reduce the workload fundamentally. Recent evidence suggests that as an employer, you can do various things to decrease the workload on your employees and change their experience of high work pressure by providing clear job descriptions, offering a sufficient level of autonomy, and encouraging or facilitating education. Creating moments for recovery, and lastly, stimulating personal leadership. Workload management can fathom all of this. It's up to the administration at an organization to oversee employee workloads and dispose of as much work stress as possible so that staff can be as productive as possible. Workload management can solve burnout. (Meulen, 2019).

To better understand the mechanisms of adequate staffing and its effects, Spencer (2013) analyzed that sufficient and appropriate nurse staffing is fundamental to guarantee that our patients get quality care. I agree with the author that the administration must consider the number, encounter level, and mix of nurses working each shift. Diminishing adverse occasions and moving forward, the quality of patient care must be a priority, and ongoing care must be a need for us all. A systematic review by Human Factors 101 (2021) confirmed that adequate staffing could reduce burnout among personnel.

Shared governance in nursing permits registered nurses to meet objectives sketched out within the Organized of Medicine's point of interest report, Long-term of Nursing: Driving Alter, Progressing Well-being. The report advocates for medical attendants to hone to the complete degree of their instruction and participate in nonhierarchical choice-making. Shared governance increases nurture engagement, makes strides in persistent results, and permits clinic chairpersons to optimize productivity, increment nurture maintenance and advance quality care. These were the findings of the Journal of Nursing Administration, to which the Clinical Knowledge Network (2017) agreed.

Career Development Plan Top Priority

Career development proactively creates career ways and steps to hold, retain, and develop employees. That was when employees demonstrated the best components that would cause them to stay (SHRM 2022). To stay sharp and relevant, employees must constantly grow their skills. Making employee development a priority ensures your personnel boosts engagement and attracts top talents to stay for good in the company (Heinz 2021).

Several empirical studies have focused on making career development a top priority in holding personnel to work for the institution. A systematic review by Hutton (2014) confirms that undertaking extra preparation or a movement to assist your information is essential throughout your career. In an ever-changing and quick-paced commerce environment, keeping your aptitudes and information up to date will help you throughout your career. According to Molony (2021), here are some ways to ensure your best employee stays.

First, it is essential to keep our best employees happy, so they will continue to make the workplace the best place by recognizing their efforts. There is nothing better than a boss telling you they realize how difficult you have been working and what an incredible job you have done. It is not continuously simple to discover the time to pat each of your employees on the back, but the truth is that one of the foremost successful things you will do is to keep your workers locked in and cheerful. (Ducoff 2017, Get Smarter 2021) confirmed the relationship between recognizing employees and making them stay.

Second, when employees are bored, they are useless and can let their standards slip. There must be a careful balance by challenging workers sufficiently to learn and extend their skills while still being effective at essential tasks. This is critical to their happiness on the job (Molony 2021). Challenging employees will show how valuable employees are to the company. This will send the message to the employees that you trust their abilities. With this, they stay with the company for good.

Working Climate

Freedman (2020) discusses the importance of a positive work environment that helps boost employee morale, productivity, and retention. (Enmeh, 2018) views that employees are much more likely to do their best work when they are happy, satisfied, and engaged. Retention is high. This culture permits employees to feel safe, secure, and at home with the organization. Employees will feel comfortable coming to the office every day (Training, 2017)

Pro-active managers and co-workers can create a culture of trust and empowerment that will lead to employees' commitment and the intention to remain with the organization and actively participate in the company's well-being (Peterson 2021). Several empirical studies have focused on encouraging employees to be proactive, which leads to higher efficiency and effectiveness (Taylor, 2019). Over the years, cases of proactive co-workers and leaders have become more extensively reviewed (Taylor, 2019, Ong, 2014, Blank, 2021). Proactive managers and co-workers make work easier and less stressful, leading to increased employee retention in the organization.

A careful study of the literature shows that teamwork can build strong employee inter-relationships, helping each other and building stronger ties that will ingrain positive teamwork propensities. You'll construct a practical bunch that can handle the most challenging issues. It can encourage good open communication with each team member. It promotes respect for team members, collaboration, and practical strategies to solve problems and conflicts. A shared mission and common goal can help the group work together and create enthusiasm (Smith, 2019, Rose, 2021, Indeed Editorial Team, 2021). Good teamwork makes stressful work easy. Nurses who cooperate in the unit stay in their profession for a long time.

Benefits

The study by Virgin Pulse (2021) found that employee benefits are critical. Advertising benefits to your workers are vital since it will make it appear they contribute not only to their general well-being but to their future. An intense worker benefits bundle can aid in pulling in and holding talent. Benefits can assist you in separating your trade from competitors. Worker benefits can move your company's footline forward by locking representatives to participate in prosperity programs, such as Virgin Beat. More beneficial representatives cruelly decreased healthcare costs for your organization. Workers with fewer well-being dangers encounter fewer wiped-out days, fewer trips to the specialist, and spend more time in your organization, bringing their best selves to work each day. Workers are the pivotal framework supporting your organization's capacity to develop and flourish. So, how vital are worker benefits to accomplishing your company's objectives and goals? They are essential (Parkins, 2019, Eden Health Team, 2021). The higher the company's benefits, the more likely the employee will stay.

A well-compensated and locks-in culture will make workers more likely to stay in their occupations long-term. Cash isn't the only thing that persuades someone to perform well at their job, non-cash incentives are as well (Boitnott, 2020). A good compensation bundle guarantees retention and diminishes the company's turnover rate. Employees, on their part, will be happy to stay and spare potential turnover expenses (Dirks, 2020). A company must craft a great compensation plan to entice nurses to remain in their profession, making the company successful.

Focusing on employee retention and engagement is the focus of Salmi (2021) through non-financial incentives. Giving non-financial incentives can make an employee feel valued, retain top talent, and affirm the vital relationship with employees. The company can create a wellness program to reduce absenteeism by supporting a healthy lifestyle, recognition programs, housing benefits, car loan benefits, and Insurance benefits.

Smith (2018) mentions that money is not the only thing an employee needs. Non-financial benefits can entice employees and keep them fulfilled, making them stay long-term. The right combination of tangible or financial rewards and intangible or non-financial rewards seems to impact staff retention positively (Armstrong & Brown, 2006).

Method

Research Design

The investigation has worked using Conjoint Analysis in collecting and analyzing information. Conjoint analysis has two primary goals. First, to decide the contribution of indicator factors (property levels) to nurses by and large inclinations, and second, to build up a powerful demonstration of their judgments valuable in anticipating nurse's acceptance of any combination of qualities, indeed those not initially evaluated by them (Hair et al., 1995). Conjoint analysis may be a market-based inquiry about businesses' utilization for more than 35 years to anticipate consumer inclinations in item planning and acquiring. Conjoint analysis is picking up pertinence in healthcare because it inspires tendencies whereas permitting estimation of the relative significance of distinctive perspectives of care, the trade-off between these viewpoints, and add up to fulfillment or utility inferred from its respondents whether they be patients or partners (Wilson et al., 2014). Conjoint Analysis appeared attainable to capture the nurse's perspective, making the findings and its products exceedingly likely to be received because the nurses' preferences served as the premise for the advancement. This research has expected those points to create a rule to act as the premise for making nurses stay in their profession.

Study Sites and Subjects

Simple random sampling has been used in this research. The broad populace for this will include staff nurses in the different clinical areas practicing in primary hospitals within the Gingoog Bay Area and other Adventist Hospitals within Mindanao. The sample for this study included 100 nurses. Each participating hospital will have 25 participants for this research. Participants will have a set of conjoint cards to choose from. Some participants who will be able to start may decide not to complete it; that is why I am choosing a minimum sample size of 100 participants.

Data Measures

Four attributes were selected for this study. These features and their corresponding layers were identified based on the literature and later shortlisted for their effectiveness and applicability. An Orthogonal Array (O.A.) is used to generate attribute contributions. Dr. Genichi Taguchi suggested that this robust statistical and mathematical approach would allow the study of multiple traits and their attributes to determine the most critical parameters of the studied phenomenon. An orthogonal design generated ten combinations based on the specified attributes and strata, using two holdouts as card choices and bundles. These were translated visually through cards using a desktop publisher

software which will serve as representations during card sorting. From this consolidation, the attribute of making nurses stay program will be designed.

Data Collection

Moreover, the facts gathered from February 2022 to March 2022 during duty hours in the hospital. Registered nurses will participate in Gingoog Bay Area primary hospitals and other Adventist Hospitals in Mindanao. Participants may refuse to take an interest and give a legitimate reaction, and there may be trouble getting volunteers from different places. There may be a deficiency of nearby considerations in the local studies about the issue.

Data Analysis

The primary purpose of statistics in the conjoint analysis is to estimate the strength and level of preference for the attributes included in the survey. For this purpose, SPSS Version 23 will statistically assess participants' conjoint types. Descriptive statistics such as frequency distribution, percentage, and weighted mean will be employed. To establish relationships between variables, Pearson Product-Moment Correlation measured the strength of the linear relationship between factors related to the respondents' preferences. Kendall Tau was also employed to measure nonlinear dependence between variables.

Figure 1

Sample Conjoint Cards



Results

Results show that most respondents are between the 26-35 bracket (47%), followed closely by the 36-45 age group (27%). The following respondents are female, constituting 73% differentiation from their male partners (27%). Most of the subjects are regular employees consisting of 69% and contractual, 31%. On the other hand, married employees compose 63%, while single employees 37%. Concerning work experience, a significant number of respondents are generally proficient, having worked for 6-15 years of work experience (51%). Respondents with five years of work experience are 43%.

Table 1
Distribution of Respondents by Profile (N=104)

| Demographic Profile | Frequency | Percent |
|----------------------------|------------------|----------------|
| <u>Age</u> | | |
| <25 years old | 13 | 13.0 |
| 26-35 years old | 49 | 47.0 |
| 36-45 years old | 28 | 27.0 |
| 46-55 years old | 11 | 11.0 |
| >56 years old | 3 | 3.0 |
| <u>Gender</u> | | |
| Male | 29 | 28.0 |
| Female | 75 | 72.0 |
| <u>Tenure</u> | | |
| Regular | 72 | 69.0 |
| Contractual | 32 | 31.0 |
| <u>Marital Status</u> | | |
| Single | 38 | 37.0 |
| Married | 66 | 63.0 |
| <u>Years of Experience</u> | | |
| <5 years | 45 | 43.0 |
| 6-15 years | 53 | 51.0 |
| 16-25 years | 4 | 4.0 |
| 26-35 years | 1 | 1.0 |
| >36 years | 1 | 1.0 |

The research sample represented four hospitals, mainly working nurses in nine different areas of specialization here in Mindanao, Philippines. A predominance of responding nurses came from the Ward (47%), followed by the Emergency Room (21%), Hemodialysis (11%), Operating and Delivery Room (8%), Administration (6%), Intensive Care Unit (5%), and with the rest remaining areas sharing the same spot with 1% each.

Table 2
Distribution of Respondents by Area of Specialization (N=104)

| Area of Specialization | Frequency | Percent |
|-------------------------------|------------------|----------------|
| Ward | 49 | 47.0 |
| Emergency Room | 22 | 21.0 |
| Hemodialysis | 11 | 11.0 |
| Operating/Delivery Room | 8 | 8.0 |
| Administration | 6 | 6.0 |
| Intensive Care Unit | 5 | 5.0 |
| Oncology | 1 | 1.0 |
| Neonatal Intensive | 1 | 1.0 |
| Endoscopy | | |

A consistent method of reasoning for this result is the geographical nearness, which can influence the participants' logistics and that of the institutions they represent. It was considering costs, going to institutions, and selecting a few to represent a discipline in the said research, affecting the number of representations; this explains why the four hospitals within Mindanao, Philippines are the only attending that was served.

A suggestion that this program was created should not only come up to the requests of the survey participants but should also meet other required criteria. In turn, it would clear the way for regionalization and lead to programs that will meet the worldwide needs in healthcare.

Table 3

Preferences of Nurses on What Will Make Them Stay

| Factor | Factor Levels | Utility Estimate | Std. Error | Relative Importance |
|-------------------------|--------------------------------|------------------|------------|---------------------|
| Work-Life Balance | Reduce Workload | 0.067 | 107 | 40.002 |
| | Sufficient Staffing | 0.531 | .126 | |
| | Shared Governance | .599 | .126 | |
| Career Development Plan | | 0.200 | .081 | 15.532 |
| | Skills Enhancement | | | |
| | Recognition of Strengths | 0.200 | .081 | |
| Good Working Climate | Pro-Active Managers/Co-workers | 0.127 | .081 | 15.591 |
| | | | | |
| | | | | |
| Benefits | Good Teamwork | 0.127 | .081 | |
| | Compensation | 0.644 | .081 | 28.876 |
| | Non-Financial Incentives | 0.644 | .081 | |
| (Constant) | | .483 | .085 | |

Factor levels with positive part-worth scores were most preferred over those with negative values.

Pearson's $R=0.990$, $p=0.000$

Kendall's $\tau=0.857$, $p=0.001$

Table 3 revealed the factors that shape the inclinations of the members when considering what makes nurses stay with its four qualities, specifically *Work-life Balance*, *Career Development Plan*, *Good Working Climate*, and *Benefits* with their comparing sub-layers to discover goodness-of-fit Pearson's R of 0.990, $p=0.000$ and Kendall's $\tau=0.857$, $p=0.001$ were utilized. Based on the reactions, 'Work-life Balance' is the prominent figure considered when choosing What Makes Nurses Stay, with a relative significance of 40.002%. Shared governance with a part-worth score of 0.599 is favored over sufficient staffing and decreased workload. Benefits incorporate a relative significance of 28.876%. Non-financial motivating incentives and compensation are most favored at 0.644. A *Good Working Climate* features a relative significance of 15.591% with an inclination for proactive managers and co-workers (0.081). Finally, the *Career Advancement Plan* had the slightest significance, with 15.532% of which acknowledgment and recognition of strengths was favored (0.081) over skill enhancement.

Table 4
Card Sorting Preferences of Nurses

| Card No. | Work-life Balance | Career Development | Good Working Conditions | Benefits | Utilities |
|----------|---------------------|-------------------------|------------------------------------|--------------------------|-----------|
| 1a | Shared Governance | Recognition of strength | Good Teamwork | Compensation | |
| 2 | Reduced Workload | Skill Enhancement | Pro-Active Managers/ Co-workers | Compensation | .267 |
| 3 | Reduced Workload | Recognition of strength | Pro-Active Managers/ Co-workers | Non-financial Incentives | .579 |
| 4 | Shared Governance | Recognition of strength | Pro-Active Managers/ Co-workers | Compensation | 4.201 |
| 5a | Sufficient Staffing | Recognition of strength | Pro-Active Managers/ Co-workers | Non-financial Incentives | |
| 6 | Reduced Workload | Recognition of strength | Good Teamwork | Non-financial Incentives | .833 |
| 7 | Sufficient Staffing | Recognition of strength | Good Teamwork | Compensation | 5.585 |
| 8 | Sufficient Staffing | Skill Enhancement | Pro-Active Managers/ Co-workers | Non-financial Incentives | 4.443 |
| 9 | Shared Governance | Skill Enhancement | Good Teamwork | Non-financial Incentives | 3.567 |
| 10 | Reduced Workload | Skill Enhancement | Good Teamwork | Compensation | 5.521 |

a- holdout

Based on the results, more participants were inclined to choose Card number 7, with a utility score of (5.585). They preferred sufficient staffing, recognition of each strength, good teamwork, and a good compensation package. Conversely, card number 10 (5.521) features reduced workload, and the institutions provide skill enhancement programs, good teamwork, and good compensation programs. Card number 9 is the least preferred.

Discussion

Distribution of Respondents

The distribution of respondents in the survey is consistent with the figures collated by the American Association of Nurse Practitioners (AANP) in 2022 on employment rates by age rates and highlighted that the population aged 30-40 are the workforce in their prime years career-wise as a nurse and the average age of surveyed registered nurses is 52 years (NCSBN) March 30, 2022. The age groups that were most represented are 26-35 years and 36-45 years, which fell on the prime years in which employment is most observed.

The distribution of the respondents in terms of years of work experience: those with under five years of experience (43%) and 6-15 years of experience (51%), respectively, are similar to what exists worldwide. (Health Resources & Services Administration, 2022).

The more significant part of the populace is female, which is credited to the reality that many members were medical caretakers. Indeed, 86.0% of nurses are women, and 14.0% are men as of 2021, according to the Nurse Demographics and Statistics in the United States of America.

This finding has important implications for developing a program that will help the nurses since it reflects the profile of the masses likely to attribute to this proposed advancement program.

Distribution of Respondents by Area of Specialization

Nursing is the nation's largest healthcare profession, with nearly 4.2 million registered nurses (RNs) nationwide. Of all licensed R.N.s, 84.1% are employed in nursing. Nurses comprise the most significant component of the healthcare workforce, are the primary providers of hospital patient care, and deliver most of the nation's long-term care (Smiley et al., 2021).

Ward Nurses at 47.0%, Emergency Room Nurses at 21%, Hemodialysis Nurses at 11.0%, Operating/Delivery Room at 8%, administration at 6%, Intensive Care Unit at 5.0%, and the rest shared at 1%. Most healthcare services included by nurses include those in both intensive care and community settings, including private homes, well-being support organizations, open well-being offices, essential care clinics, domestic well-being care, nursing homes, small clinics, outpatient surgicenters, nursing school-operated clinics, protection and overseen care companies, schools, mental well-being organizations, hospices, the military, industry, nursing instruction, and healthcare research. The challenge, therefore, is to design the best program to foster the retention of nurses in their profession.

Preferences of Nurses on What Will Make Them Stay

The objective of this research is to find out what will make nurses stay in their profession, and the prominent figure that will make them stay is having a Work-life Balance with a relative significance of 40.002%. The benefits that the institutions are offering make a significance of 28.876%. A Good Working Climate features a relative significance of 15.591%, with an inclination for proactive managers and co-workers. Finally, the Career Advancement Plan had the slightest significance, with 15.532%, which is acknowledgment and recognition of strengths.

Numerous challenges confront nursing leadership, specifically how to make conditions necessary to preserve and maintain a solid nursing workforce. Nurses' job satisfaction has risen as a crucial indicator of whether nurses remain in an organization and stay in the profession. When inspected more closely, work fulfillment has been related to nurses feeling enabled to work out independence over their possess hone and having organization.

Card Sorting Preferences of Nurses

This observation transcendentally validates that the participants esteemed the significance of attributes and how these create an ideal program for nurse practitioners, which is indicated with the most preferred conjoint card. The chosen combination is foremost consistent with the inclinations and significance recognized by the participants among the cards. This finding will give a closer view when creating a retention program for nurses that would be adjusted to the Philippine setting, which can engage the institutions as they have an active role in initiating this program.

Based on these results, a model for nurse retention was conceptualized. It outlines the interrelatedness of what makes nurses stay in their profession and its traits that fit within Adams' Equity Theory.

Figure 1
Equity Theory Model



Holding employees offers advantages that are precisely the inverse of nurse turnover. In addition, it advances a better work environment and culture since nurses frequently collaborate with other staff individuals. Retention makes employees trust the company as well.

It's difficult for workers to feel persuaded within the work environment if mistreated. When unfair treatment persists, workers may do any of the following: Decrease inputs (do less work), push more yield from the company (more pay), go into survival mode (do their job and little more), become resistant or safe (act out on other issues), becoming excessively competitive (center on lessening the yields of others), and lastly, quit, one thing we don't want the current nurses to do it. When nurses accept that the work environment is out of line, they doubt organizational administration. Nurses' morale and motivation suffer when leaders disregard this distrust, according to the World of Work Project (2021) and Tanner (2020).

This research was embraced to create a retention program by investigating the inclinations of the partners of healthcare institutions. This investigation captured the institution's viewpoint, making the discoveries and items profoundly likely to be received because the participant's preferences served as the premise for the innovations.

The results of this study show that a well-designed retention program would strengthen and encourage interpersonal learning, growth, development, and collaboration with the institutions. The following are the recommendations drawn based on the findings and conclusions:

1. Broader tests in other geographic areas, which will include more institutions, should be done to come up with more accurate results.
2. On the other hand, a study based conjoint can be done in each institution to determine precisely what should be done to that particular institution concerning the problem discussed herein.
3. Test and assess the model's appropriateness through an achievability consideration, which can be national or regional, especially within the government.

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NURSE'S JOB SATISFACTION: ITS INFLUENCE ON INTENT TO LEAVE AS MEDIATED BY COVID-19 ANXIETY

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Abstract

There are growing concerns regarding nurses' job satisfaction worldwide because of turnover issues. This study aimed to examine the relationship between job satisfaction on the nurses' intention to leave associated with COVID-19-related anxiety among expatriate nurses working in selected Saudi Arabian primary health care centers. The emphasis of this study is to explore what contributes to nurses' staying in their organizations that can help the nursing managers formulate strategies to improve the nurses' job satisfaction and reduce their turnover issues. This study was conducted from January 2022 to March 2022 and utilized purposive sampling among the ten selected private healthcare institutions in Jeddah, Saudi Arabia. Of the 277 nurses who participated in the study, the majority were aged 40-52, female participants consisted of 55.2%, and single nurses comprised 61.4% of the population. The mediation analysis disclosed that the indirect effect of job satisfaction on intent to leave passing through COVID-19 anxiety was insignificant. It was concluded in this study that job satisfaction and its variables (work environment, work culture, relational) influence the respondents' intent to leave. Meanwhile, this study's findings imply that COVID-19 anxiety does not significantly mediate between nurses' job satisfaction and intention to leave ($\beta = 0.017$, $t = 0.99$, $p = 0.318$). Age and gender were not associated with leaving the organization, while marital status was significantly related to the intention to leave $p = 0.013$, which means that singles have a higher intention to leave compared to those who are married. Therefore, it was recommended to have open channel communications for their retirements in their human resource management. Thus, the nursing managers must support and include them in the organization's decision-making, as well as give enough breaks promptly, which may help reduce the nurses' COVID-19 anxiety.

Keywords: *nurses, job satisfaction, intent to leave, COVID-19 anxiety*

Nurses' Job satisfaction is a powerful force for any healthcare system to sustain nurses. Globally, it has been recognized that nursing is one of the most stressful jobs and has a high rate of dissatisfaction (Chien & Yick, 2016). In the UK, according to (Senek et al., 2020), nurses' intention to leave rates were between 30 and 50%, suggesting a high level of job dissatisfaction. Likewise, in Saudi Arabia, according to (Kaddourah et al., 2018), in low-level tertiary care centers in Saudi Arabia, selected randomly, 94% are dissatisfied with their work-life, and 93% of the study indicated low job satisfaction indicated their intention to leave. The study (Aljohani, 2019; Albougami et al., 2020) emphasized a low-to-moderate level of job satisfaction with a need to improve nurses' living conditions and intent to leave due to low quality of life. Understanding job satisfaction and career intentions is essential to building workforce capacity and skill mix. Moreover, to improve patient care, it is vital to assess nurses' job satisfaction, as supported by (Abualrub et al., 2016; Baysal & Yildiz, 2019; Liu et al., 2016), their studies showed that nurses' job satisfaction is considered the main predictor for intention to leave their current work.

Working conditions in Saudi hospitals, work relationships, organizational structure and culture, lack of shift flexibility and career development opportunities, conflict with physicians, problems with peers, and the demanding nature of the nursing profession were all extrinsic factors that influenced job dissatisfaction in studies conducted in the different healthcare sector, but not predicted as the reason to leave their organization (Falatah & Conway, 2019; Halcomb et al., 2018). Reduced job satisfaction may be a factor that contributes to nurses' intent to leave or actual turnover that results in a nursing shortage. Moreover, the quality of their patient care is typically compromised, and, in the end, high turnover rates may jeopardize the hospital's survival due to dissatisfied job performance, while self-efficacy in nurses contributes to turnover intention (Skelton et al., 2019; Rajamohan et al., 2019; Lim & Cho, 2018). Hospitals throughout the world are concerned about the ongoing nursing shortage. The unprecedented pressure on the Health Care System of each country presented various challenges to its nursing workforce that have potentially impacted the nurses' work performance, job satisfaction, and mental and physical health while jeopardizing their health in facing this pandemic (Lv et al., 2020; Maben & Bridges, 2020; Mo et al., 2020).

Moreover, recent studies that measured nurses' fear revealed that nurses in Saudi Arabia experienced a moderate fear of COVID-19 using the demographic profile as their predictor (Moussa et al., 2021). However, it is unknown how much COVID-19 Anxiety played an integral part in nurses' job dissatisfaction and intention to leave their organization. Because of the demands of their jobs during the Coronavirus disease (COVID-19) pandemic, job satisfaction became a concern for health workers, particularly nurses. Additionally, according to (Albougami et al., 2020), Filipino & Indian nurses had a high rate of intentions to quitting professions in SA. Job dissatisfaction and poor health are the main reasons nurses are fueled by their desire to leave their organizations and careers early. According to this research, job satisfaction and organizational commitment are essential determinants of nurse turnover. Most studies on health worker job satisfaction have been undertaken in high- and upper-middle-income nations; a significant flaw focuses turnover behavior of the "average nurse" (Shaheen et al., 2021; De Simone et al., 2018). In addition, Talaei et al. (2020) and Simonetti et al., (2021) investigated the stress, Anxiety, and depression levels among COVID-19 pandemic nurses, implying that some nurses are affected by these issues; however, it is not known how their organization supports the nurses who experienced the issue.

Furthermore, considerable research in Saudi Arabia (SA) has studied job satisfaction among combined cohorts of Saudi and non-Saudi nurses working in the private and public healthcare sectors in diverse geographical regions. However, there is little research on nurse's intention to leave mediating the COVID-19 Anxiety that influences nurses' job satisfaction, and no studies have been found that explore the correlations between the influence of recent COVID-19 Anxiety concerning Job dissatisfaction and nurses' intention to leave among primary nurses in private institutions. Thus, this study investigates the impact of job satisfaction on the intention to leave correlating

to COVID-19-related Anxiety among female and male nurses working in selected Saudi Arabian primary health care centers. This knowledge could help Saudi nurses and nursing managers in the Saudi healthcare system and their organizations to develop strategies to maintain their nursing workforce even in the middle of COVID-19. This study will be beneficial to Nursing Managers to develop appropriate strategies to impede the shortage of Nurses in the Kingdom.

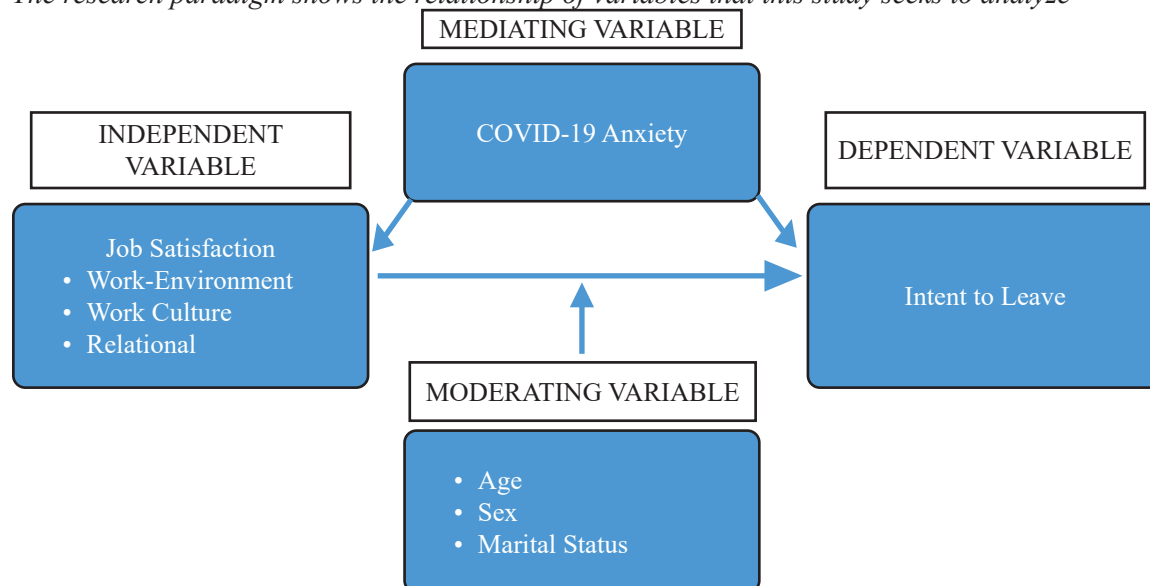
This study explored the influence on nurses' job satisfaction and intent to leave as mediated by their perceived COVID-19 anxiety. Specifically, it answered the respondents' extent of job satisfaction based on working environment, relational factors, work culture, and the extent of their COVID-19 anxiety and the extent of their intentions to leave their organization. Moreover, this study determined whether there is a significant relationship between nurses' job satisfaction and the intent to leave during the COVID-19 pandemic and whether a significant relationship exists between nurses' job satisfaction and COVID-19 anxiety. Finally, it investigated the mediation effects of COVID-19 anxiety on the relationship between job satisfaction and nurses' intent to leave during the COVID-19 pandemic.

The researcher used Herzberg's motivation (Satisfiers)-hygiene theory, by which hygienic elements are extrinsic to the job (work environment). He also stated that the reverse of job discontent is no job dissatisfaction and vice versa. It is vital to remember that poor hygiene can lead to job discontent, while more excellent hygiene can help to alleviate it. Importantly, hygienic issues (Alston, 2017) cannot cause job satisfaction. While motivated variables might lead to job happiness, the absence of motivational factors leads to job dissatisfaction. For various reasons, Herzberg's theory is used as a framework in this study, such as the effect of the working environment (extrinsic/hygiene) and work culture and relational (Satisfiers) on nurses' intent to leave their organization. For example, the Mueller/McCloskey Satisfaction Scale 25-item version, used to investigate job satisfaction among nurses, related to the hygiene-motivation aspects. The second reason to apply Herzberg's theory is to see if there is a linkage between job satisfaction and intent to leave, as well as job satisfaction and COVID-19 anxiety. Increased rates of turnover mean more dissatisfied nurses, and this means that it affects organizational health. Job advancement, recognition, and collegial relations are part of the satisfiers (motivation); furthermore, company policies and working environment are the hygienic factors (Bryant, 2018).

Research Paradigm

Figure 1

The research paradigm shows the relationship of variables that this study seeks to analyze



Methodology

This study utilized a quantitative correlational design to explore the nurse's job satisfaction their intent to leave their organization and profession, as mediated by COVID-19 anxiety. The researcher used this method as it is the most appropriate in addressing the needs of the studies.

Purposive sampling was utilized, and the surveyed respondents were the nurses working in primary care in the 10 different selected private institutions in Jeddah Province of Saudi Arabia. Each of these selected institutions offers several nurses ranging from 50 to 150 expatriate nurses per center. The target population were the male and female nurses who are currently registered in the Saudi Commission for Health Specialties who provide direct patient care, who have been employed as a nurse in Saudi Arabia for more than 6 months, thus working in private institutions, and who are voluntarily consented to participate. Unit managers and clinical resources were excluded from the mandate of their institutional policy, systems, procedures, and organizational climates, as they supervise staff nurses and are probably not directly involved in patient care. All nationalities with less than six months of service experience working in primary health care centers were also excluded from the study. Ultimately, 277 respondents answered the online and manual survey from January to March 2022.

The study was conducted from January to March 2022. Before this, the researcher asked permission from the respective heads of the relevant primary care centers. Permission to conduct the study was verbally approved so that the researcher could freely approach the target respondents and provide them with the online link and manual paper for the survey if they would be interested in participating. Once they agreed, the researcher provided a short introduction about the study's purpose and answered the respondent's queries. Online survey links were sent to the nurses' company email, group accounts, Facebook, WhatsApp, and other social media accounts. The online medium for the questionnaire reservoir was Google Forms. To guarantee the confidentiality of data, individual identities were not collected.

The research underwent ethical review before the survey was conducted. The research study observed the protection of subjects' rights through informed consent. Informed consent was e-mailed and given to the respondents before the main survey. If ever questions regarding the confidentiality of the subject were raised; the researcher assured and reiterated that what is written in the informed consent such as the purpose of the research; data collection activities and devices; anonymity by not linking any subject with the data that they provide; and that participation is voluntary and may withdraw at any time was strictly followed.

In gathering the data, the researcher utilized adapted and modified questionnaires from previous studies. It consisted of 4 parts, roughly 10-15 minutes to answer all the questions. Part 1 discussed the demographic data of the respondents including the age, length of service in the current organization, sex, marital status, and nationality.

Part 2 explored the respondents' job satisfaction based on 4 domains (Extrinsic Motivation, Professional Opportunities, Collegial Relationships, and Work Environment), the researcher adapted and Modified the Mueller/McCloskey Satisfaction Scale by (Lee et al., 2016), originally it consisted of 25 questions, the researcher did not adopt the items about maternity leave, child care facilities, and those that were irrelevant to the study; therefore, only 23 items were adapted and modified. The reliability study suggested that it is a potentially sound tool and has a stronger coefficient of internal consistency MMSS-25 (Cronbach's Alpha ranged = 0.71 - 0.87). This indicates that the instrument is likely to produce consistent results—a large majority of the variance observed is the nurse job satisfaction in evaluating the outcomes of organizational interventions that seek forward to increase job satisfaction.

Table 1*Interpretation of Job Satisfaction sub-variables*

| Weight/ Scale | Response | Mean Range | Verbal Interpretation |
|---------------|----------------------------|------------|-----------------------|
| 5 | Strongly Agree | 4.51-5.0 | Highly Satisfied |
| 4 | Agree | 3.51-4.5 | Very Satisfied |
| 3 | Neither disagree nor agree | 2.51-3.5 | Moderately Satisfied |
| 2 | Disagree | 1.51-2.5 | Slightly Satisfied |
| 1 | Strongly Disagree | 1.0-1.50 | Not at all satisfied |

A five-point Likert scale was used to measure the items of the sub-variables, from strongly disagree = 1 to strongly agree = 5. In addition, this instrument interpretation used to translate the verbal interpretation of the mean standard range of 4.5-5.0 Highly Satisfied to 1.0-1.50 as Not satisfied at all.

Part 3 measured the intention to leave using the turnover intention scale (TIS) by Bothma and Roodt (2013). The researcher will fully adapt and modify the turnover intention (the intention to leave or stay) is a six-item scale in which the response scale is scored on a five-item Likert scale ranging from 1 (never) to 5 (always). The TIS-6 has a Cronbach alpha reliability coefficient of 0.80.

Table 2*Interpretation of Intent to Leave*

| Weight/ Scale | Response | Mean Range | Verbal Interpretation |
|---------------|------------------|------------|--------------------------|
| 5 | Always | 4.51-5.0 | Highly Likely to leave |
| 4 | Most of the Time | 3.51-4.5 | Likely to Leave |
| 3 | Sometimes | 2.51-3.5 | Maybe to leave |
| 2 | Rarely | 1.51-2.5 | Unlikely to leave |
| 1 | Never | 1.0-1.50 | Highly unlikely to leave |

A five-point Likert scale was used to measure the items of the sub-variables, from Never = 1 to Always = 5. In addition, this instrument interpretation translated the verbal interpretation of the Mean Standard Range of 4.51-5.0 as Highly Likely to Leave to 1.0-1.50 as Highly unlikely to Leave.

Part 4 determined the level of experienced anxiety by using an adapted and modified descriptive CAS questionnaire the COVID-19 anxiety scale (Silva et al., 2020). All seven questionnaire items were fully adopted with minimal modification, as it is related to measuring the experienced COVID-19 anxiety. According to research, this instrument has a Cronbach alpha reliability coefficient of 0.70. It shows that the CAS instrument is an adequate and reliable tool to assess COVID-19-related anxiety.

Table 3*Interpretation of COVID-19 Anxiety Scale*

| Weight/ Scale | Response | Mean Range | Verbal Interpretation |
|---------------|------------------|------------|-----------------------|
| 5 | Always | 4.51-5.0 | Severely Anxious |
| 4 | Most of the Time | 3.51-4.5 | Moderately Anxious |
| 3 | Sometimes | 2.51-3.5 | Mildly Anxious |
| 2 | Rarely | 1.51-2.5 | Very mildly Anxious |
| 1 | Never | 1.0-1.50 | Not Anxious at all |

A Five-point Likert scale was used to measure the items of the sub-variables, from strongly disagree = 1 to strongly agree = 5. In addition, this instrument interpretation was quantified using the Verbal Interpretation of the Mean Standard Range of 4.5-5.0 as Severely Anxious to 1.0-1.50 as Not Anxious at all.

The data was analyzed using SPSS and Jamovi software 2.2.5. Descriptive statistics such as frequency, percentage weighted mean, standard deviation, and Pearson Moment Correlation were processed for the gathered data. Descriptive statistics was used to determine the respondent's demographic and work-related characteristics. The mean and standard deviation (SD) were used to calculate and assess job satisfaction and intention to leave. The differences in the respondents' intention to leave by nationality were determined using ANOVA and t-tests to compare the intention to leave among the respondents when grouped according to gender, age, and marital status. The relationship between intention to leave and age group and years of experience in the current hospital was examined through Pearson's Moment Correlation. To find out if COVID-19 mediates with Job satisfaction and intent to leave, multiple regression and mediation analysis were utilized.

Results and Discussion

Using a combined online and manual survey among 291 nurses in the 10 different selected private institutions in Jeddah Province of Saudi Arabia, however, only 277 nurses were eligible and usable to be part of this study explored the influence on Nurses' Job Satisfaction and Intent to Leave as Mediated by their perceived COVID-19 Anxiety. The results of this study are presented in a tabular format together with the corresponding analysis of the gathered data.

Demographic Profiles of the respondents. Table 1 presents the demographic profiles of the respondents. The results show that the majority of the respondents are aged 40-52 (f=144) or 55% of the population. On the other hand, 133 respondents were aged 26-39, or composed of 45% of the population. Next, the length of service in the current organization profile of the respondents shows that the majority have been in service for 4-6 years (f=155), or 56% of the population. This was followed by those who have been in service for 1-3 years (f=66) or 23.8% of the population. Lastly, 56 respondents were in service for 7 years and above which comprised 20.2% of the population. In terms of gender, the majority of the respondents were female (f=153) or 55% of the population. Whereas there were 124 male respondents, or 45% of the population. The marital status profile shows that the majority are single (f=170) or 61.4% of the population. Those who are married composed of 38.6% of the population (f=107). In terms of nationality, the majority are Indians (f=116) or 41.9% of the population, followed by Filipinos (f=80; 28.9%), Sudanese (f=57; 20.6%), Pakistanis (f=14; 5.1%), and Egyptian (f=10; 3.6%).

Table 4
Demographic Profiles of the Respondents

| Demographic Profiles | Frequency | Percentage |
|----------------------|-----------|------------|
| Age | | |
| 26-39 | 133 | 45% |
| 40-52 | 144 | 55% |
| Gender | | |
| Female | 153 | 45% |
| Male | 124 | 55% |

{table continues on the next page}

| | | | |
|----------------|-----------|-----|-------|
| Marital Status | | | |
| | No answer | 24 | 8.7% |
| | Single | 20 | 7.2% |
| | Married | 233 | 84.1% |
| Nationality | | | |
| | Filipino | 80 | 28.9% |
| | Indian | 116 | 41.9% |
| | Sudanese | 57 | 20.6% |
| | Egyptian | 10 | 3.6 % |
| | Pakistan | 14 | 5.1% |

Generally, the demographic profiles of the respondents show that the majority of the respondents are aged 40-52 ($f=144$), female ($f=153$), married ($f=233$), and Indian nationality ($f=116$).

Job Satisfaction as per Working Environment. The working environment has a huge impact on employees' job satisfaction. According to Raziq (2015), bad working conditions restrict employees from portraying their capabilities and attaining full potential. Organizations must realize the vitality of having a good working environment. This study showed that respondents' job satisfaction with their working environment garnered ($WM= 2.826$, $SD= 0.520$) which is equivalent to moderately satisfied with their working environment.

Job Satisfaction as per Collegial Relational. Results confirm that interactions with colleagues are a significant contributor not only to job satisfaction but also to organizational performance. Wherein it supports this study that the respondents are moderately satisfied at a level of $WM(2.576)$ $SD(0.746)$, moreover it shows that among the 3 sub-variables collegial relational has the lowest weighted mean. There is a close correlation between what makes two people colleagues, what it means for them to have a good collegial relationship, and how this relationship can contribute to a good life (Betzler & Loschke, 2021).

Job Satisfaction as per Work Culture. This is characterized by the company's climate that makes employees involved through interactions with their superiors, receiving praises that are within their policies and serve as a reward/consequences circle. This study showed that among the 3 independent sub-variables of job satisfaction gathered, organizational culture has the highest weighted mean 2.839 ($SD = 0.746$) showing moderate satisfaction, similar to the study of (Janicijevic et al., 2018), mentioned that job satisfaction is influenced when different organizational factors such as organizational culture is involved, not by harmonizing people but thru its values and its norms.

Table 2

Weighted Mean Table of The extent of job satisfaction of the respondents

| Sub-Variables | Questions | Weighted Mean | SD | Verbal Interpretation |
|---|--|---------------|-------|-----------------------|
| Working Environment ($WM= 2.826$, $SD= 0.520$) | 1. I am satisfied with my Salary | 2.542 | 0.814 | Moderately Satisfied |
| | 2. There is a fair distribution of vacation plan | 3.155 | 0.902 | Moderately Satisfied |
| | 3. The benefits package (insurance, retirement...) | 1.942 | 1.051 | Slightly Satisfied |
| | 4. My Working Hours is 8 hours a day | 2.596 | 0.831 | Moderately Satisfied |

{table continues on the next page}

| | | | | |
|---|--|-------|-------|----------------------|
| | 5. My Working duty schedule hours is flexible | 3.195 | 0.863 | Moderately Satisfied |
| | 6. I have Opportunity to work for consecutive days | 3.181 | 0.814 | Moderately Satisfied |
| | 7. I have Opportunity for part-time work | 2.628 | 0.800 | Moderately Satisfied |
| | 8. Weekends off per month is given | 3.148 | 0.823 | Moderately Satisfied |
| | 9. Flexibility in scheduling time off | 3.141 | 0.736 | Moderately Satisfied |
| | 10. I am compensated for working on weekends | 2.733 | 0.821 | Moderately Satisfied |
| Collegial Relationship (WM = 2.576, SD= 0.746) | 11. My Chief nurse or facility manager provides support when needed | 2.852 | 0.899 | Moderately Satisfied |
| | 12. My nursing peers likes me | 2.549 | 0.983 | Moderately Satisfied |
| | 13. I have a good professional relation with the physician I work with | 2.329 | 0.891 | Moderately Satisfied |
| | 14. I have enough time on nursing delivery care method | 2.968 | 0.805 | Moderately Satisfied |
| | 15. I have opportunities with social contact at work | 2.711 | 1.020 | Moderately Satisfied |
| | 16. I have opportunities with social contact after work | 3.170 | 0.819 | Moderately Satisfied |
| | 17. I have professional interactions with other health disciplines | 3.404 | 0.729 | Moderately Satisfied |
| | 18. I have opportunities to belong on committees | 2.650 | 0.574 | Moderately Satisfied |
| | 19. I have opportunities for career advancement | 2.635 | 0.590 | Moderately Satisfied |
| Organizational Culture (WM= 2.839, SD=0.754) | 20. I received recognition from my superiors | 2.679 | 0.776 | Moderately Satisfied |
| | 21. I received recognition of work from my peers | 2.780 | 0.636 | Moderately Satisfied |
| | 22. I have encouragement and positive feedback | 3.610 | 0.538 | Very Satisfied |
| | 23. I have participation in organizational decision making | 2.509 | 0.515 | Moderately Satisfied |
| GWM | | 2.831 | 0.793 | Moderately Satisfied |

Table 2 represents the extent of job satisfaction of the respondents. The results show item 22 or “I have encouragement and positive feedback” garnered the highest mean (WM=3.610; SD= 0.538) or an interpretation of Very Satisfied. On the other hand, item 5 “My Working duty schedule hours is flexible)” garnered the lowest mean (WM= 1.942; SD= 1.051) or an interpretation of slightly Satisfied. Generally, the respondents’ extent of job satisfaction is moderate with a grand weighted mean of 2.831. The results imply that having flexible hours as a working duty schedule has a moderate influence on the extent of job satisfaction of the nurses.

Table 3*Weighted Mean Table of the Extent of Nurses' Intent to Leave during the COVID-19 Pandemic*

| Intent to leave | Weighted Mean | SD | Verbal Interpretation |
|---|---------------|-------|-----------------------|
| 1. How often have you considered leaving your job? | 3.090 | 0.934 | Maybe to leave |
| 2. How satisfying is your job in fulfilling your personal needs? | 2.430 | 0.872 | Unlikely to leave |
| 3. How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals? | 2.484 | 0.883 | Unlikely to leave |
| 4. How often do you dream about getting another job that will better suit your personal needs? | 2.375 | 0.972 | Unlikely to leave |
| 5. How likely are you to accept another job at the same compensation level should it be offered to you? | 2.816 | 0.974 | Maybe to leave |
| 6. How often do you look forward to another day at work? | 2.823 | 0.952 | Maybe to leave |
| GWM | 2.659 | 0.931 | Maybe to leave |

The extent of nurses' intent to leave refers to the nurses' intention to leave their current organization. The results show that item 1 or "How often have you considered leaving your job?" garnered the highest mean (WM= 3.090; SD= 0.934) or an interpretation of Maybe to leave. On the other hand, item 4 or "How often do you dream about getting another job that will better suit your personal needs?" garnered the lowest mean (WM= 2.391; SD= 0.989) or an interpretation of Unlikely to leave. According to one study, 80 percent of nurses who left their jobs in the previous year intended to do so (Labrague & Delos Santos, 2020). In the current study, the nurses may have had the intent to leave during the COVID-19 pandemic which garnered a grand weighted mean of 2.659.

Table 4*Weighted Mean Table of the level of COVID-19 Anxiety of the Respondents*

| COVID-19 ANXIETY Scale | WM | SD | Verbal Interpretation |
|--|-------|-------|-----------------------|
| 1. I feel bad when thinking about COVID-19 | 2.379 | 0.907 | Very mildly Anxious |
| 2. I feel heart racing when I read about COVID-19 | 1.682 | 0.978 | Very mildly Anxious |
| 3. I feel anxious about COVID-19 | 1.397 | 0.826 | Not Anxious at all |
| 4. I feel uneasy when reading news about COVID-19 | 1.404 | 0.827 | Not Anxious at all |
| 5. I have trouble relaxing when I think about COVID-19 | 1.502 | 1.072 | Not Anxious at all |
| 6. I feel like I may panic when I update myself about COVID-19 | 1.379 | 0.828 | Not Anxious at all |
| 7. I am afraid of being infected with COVID-19 | 2.444 | 0.869 | Very mildly Anxious |
| General Weighted Mean | 1.742 | 0.918 | Very mildly Anxious |

Table 4 shows the level of COVID-19 anxiety of the respondents. Which is defined as a level of anxiety that is associated with COVID-19. This represents the level of COVID-19 anxiety of the respondents. On the other hand, item 3, or "I feel anxious about COVID-19" garnered the lowest mean (WM= 1.368; SD= 0.825) or an interpretation of Not Anxious at all. Generally, the nurses have a very mild level of COVID-19 anxiety which gained a grand weighted mean of 1.742, SD= 0.918.

Therefore, it is important to infer that the respondents are considered very mildly anxious during the COVID-19 pandemic. Similarly according to (Labrague & De los Santos, 2020), that a low level of anxiety is helpful to motivate and generate excitement in an individual, might be due to persistent exposure. Whereas, the study of (Mo et al., 2020) that the main source of anxiety in nurses during the COVID-19 pandemic was fear of becoming infected or unknowingly infecting others.

Table 5 presents the Correlation of Job Satisfaction to Intent to leave, b. Correlation between Job Satisfaction to COVID-19 anxiety, c. Correlation between Covid 19- anxiety to Intent to leave.

Table 5

Correlation of Job Satisfaction to Intent to Leave and COVID-19 Anxiety

| Independent Variable | Dependent Variable | r value | p- value | Remarks | Decision |
|----------------------|--------------------|---------|----------|--------------------------------------|----------------------------|
| a. Job satisfaction | Intent to leave | 0.767 | 0.000 | There is a strong correlation | Reject the null hypothesis |
| b. Job satisfaction | Covid-19 anxiety | 0.99 | 0.101 | There is a strong correlation | Reject the null hypothesis |
| c. Covid-19 anxiety | Intent to leave | 0.171 | 0.004 | There is a weak positive correlation | Reject the null hypothesis |

**Correlational at a level of 0.05 (two-tailed)*

It was explored in this study that there is enough evidence to suggest that there is a significant strong positive correlation ($r(277) = 0.767$; $p = 0.00^{**}$) between Job satisfaction and nurses' intention to leave at the 0.01 level. On the other hand, it may be assumed that there are factors that even respondents have job satisfaction they have a high intent to leave their current organization. Similar to the studies of Lu et.al (2002), their discriminant analysis displayed that 38.4% of job satisfaction was correctly classified in predicting the intention to leave the organization, and 30.5% in predicting the intention to leave the profession. Additionally, the analysis showed that there is a significant correlation ($r = 0.99$; $p = 0.101^{**}$) between respondents' Job satisfaction and COVID-19 anxiety, which shows that if the respondents have enhanced job satisfaction, their anxiety brought by COVID-19 diminished. As mentioned by the studies of Siddiqui et al. (2022), their findings indicated a high incidence of COVID-19 pandemic-related general anxiety disorder among younger physicians, that balanced by boosted job satisfaction and a sense of being respected. The impact of COVID-19 anxiety on the respondents' intention to leave their organization has a weak positive correlation at a level of $r(277) = 0.171$; $p = 0.004^{**}$), according to Labrague and Delos Santos (2020), by addressing the psychological support to nurses as the impact of COVID-19, may results to decrease stress levels and lower the intent to leave their job and organization.

Table 6

Mediation Analysis

| Total effect | | Direct Effect | | Indirect Effect of JS on C19A(a*b) | | | | |
|--------------|---------|---------------|---------|------------------------------------|-------------|--------|---------|-----------------|
| Coefficient | p-value | Coefficient | p-value | | Coefficient | SD | T value | P Values |
| 1.381 | 0.000 | 1.362 | 0.000 | JS.>C19A>ITL | 0.00171188 | 0.0181 | 1.04 | 0.298 |
| | | | | | | | | BI (95%) |
| | | | | | | | | -0.0124; 0.0585 |

Mediation analysis was performed to assess the mediating role of COVID-19 anxiety on the linkage between Job Satisfaction and Intention to Leave. The results on Table 6 revealed that the total effect of JS on ITL was significant ($\beta = 1.381$, $t = 20.82$, $p < 0.001$). With the inclusion of the

mediating variable (C19A), the impact of JS on ITL was still significant ($\beta = 1.362$, $t = 21.34$, $p < .001$). The indirect effect of JS on ITL passing through C19A was found not significant ($\beta = 0.017$, $t = 0.99$, $p = 0.318$). This shows that the relationship between JS and ITL is not mediated by C19A. Likewise with the study of Gundongan (2021), anxiety and fear of COVID-19 have an indirect effect on life satisfaction.

Table 7

Differences of Respondents Age When Group and Their Intent to Leave

| Age group | Mean | SD | Df | t-stat | p-value | Interpretation |
|-----------|-------|-------|---------|--------|---------|----------------|
| 26-39 | 2.655 | 0.604 | 275.000 | 0.367 | 0.714 | Accept |
| 40-56 | 2.670 | 0.642 | | | | Hypothesis |

This study was conducted to determine if there are differences in respondents' intent to leave when grouped into age. Age grouping was based on generational age theory, by which ages 26-39 are the so-called millennials and aged 40 to 56 are the Gen-X. According to King et al. (2019), people may experience changes in their needs, interests, preferences, and strengths throughout their careers, sweeping group differences depending on age or generation alone do not seem to be supported. A paired sample t-test was utilized since the researcher utilized a within-subjects design. Results reveal that the scores obtained for ages between 25-39 and their intention to leave is significantly lower ($M = 2.655$, $s = 0.604$), compared to the scores obtained from the age group 40-56 that their intent to leave is higher than the other age grouped ($M = 2.660$, $s = 0.642$), $t(0.367)$, $p = 0.714$. With these results as the p-value is higher than $\alpha = .05$, it can be argued that nurses' intent to leave when grouped does not significantly impact the respondents' intent to leave their organization. Similar to the results Omar et al., (2016), concluded that age does not explain a unique variation in intention to leave nurses, contrary to the study of Labrague et al., (2018), the younger the nurse is, the higher their intention to leave their current organizations.

Table 8

Anova One-Way Test -Significance of Respondents' Intent to Leave to Their marital status

Dependent Variable: Intention to leave

| Source of Variation | SS | df | Mean square | F | P-value |
|---------------------|--------|--------|-------------|-------|---------|
| Between Groups | 4.047 | 18.00 | 0.225 | 0.609 | 0.013 |
| Within Groups | 95.260 | 258.00 | 0.369 | | |
| Total | 99.307 | 276.00 | | | |

The present study was conducted to determine if the marital status of the respondents affects their intent to leave their current organization. The participants voluntarily answered the category: single, married and others didn't mention their marital status. One-way ANOVA was utilized to determine if significant differences exist between the conditions. Results showed that there are significant differences in their marital status to their intent to leave. $F(2,217) = 0.609$, $p = 0.013$. In the same way, the findings of Albougami et al., (2020) found that marital status affects deciding to leave the organization, wherein, single nurses had a higher intention to leave their organization due to workplace demands. On the contrary to (Omar et al., 2015), in their study there are no significant differences in intention to leave, and there was no significant difference between married and single employees about intention to leave.

Table 9*T-test Paired Sample – Significance of Respondents' Intent to Leave If Sex is Considered.*

| Sex | Mean | SD | t-stat | p-value | Interpretation |
|--------|-------|-------|--------|---------|-------------------|
| Male | 2.660 | 0.816 | 0.279 | 0.781 | Accept hypothesis |
| Female | 2.681 | 0.666 | | | |

*Significant at a level of 0.05***

This study was conducted to determine if there are differences in respondents' intent to leave when considering gender. A paired sample t-test was utilized since the researcher utilized a within-subjects design. Results revealed that the scores obtained for male and their intention to leave were considerably lower ($M = 2.639$, $s = 0.593$), compared to the scores obtained from females their intent to leave was higher than the males ($M = 2.684$, $s = 0.683$), $t(0.216)$, $p = 0.606$. With these results as the p-value is significantly higher than $\alpha = .05$, it can be argued that nurses' intent to leave considering their gender is not significantly impacting the respondents' intent to leave their organization. Similar to the results of Wubetie et al. (2020), wherein their results showed that turnover intention was not significantly associated with their gender.

In conclusion, the study's results highlighted that expatriate nurses experienced moderate job satisfaction levels in their work environment, collegial relationships, and work culture, which are labeled as moderately satisfied during the COVID-19 pandemic. It was implied in this study that the flexibility of the working schedule influences the extent of job satisfaction. Moreover, their extent of COVID-19 anxiety levels was very mildly high, which might explain the respondents' results or maybe to leave their current organization. The differences in nurses' gender and age have no significant impact on their intent to leave; however, their marital status states that there is a difference in their intent to leave, wherein most of the single nurses have their intent to leave the organization. It was found that the total direct effect of Job Satisfaction has a meaningful impact on the respondents' intention to leave, while COVID-19 anxiety is found to be directly significantly influencing the respondent's intention to leave; however, when Job satisfaction passing through COVID-19 Anxiety was found that it is not significant as to the respondents' intention to leave their organization. Consequently, since the indirect effect is insignificant, it can be concluded that COVID-19 Anxiety does not mediate the Job Satisfaction and Intention to leave with the respondents' results.

The initial limitation is that the results were collected collectively from primary care nurses only. Further research can be conducted to include other general nurses. Another limitation is expanding the questionnaires into other language translations such as Hindi, Urdu, and Arabic for further diversification to not implicate the results. Additionally, since the study was explored in the later part of the COVID-19 pandemic in Saudi Arabia, it explains that most of the respondents were given support from the government, which could affect the results.

Implications to nursing management as a recommendation. The nursing manager needs to encourage their subordinates to have open communication about what the future may bring to them with their stay within their organization, maybe through challenging the human resource department to have a plan for their retirement; their insurance benefits may be categorized based on their needs considering their rank in the organization, and giving a clear clinical pathway when they achieve such pieces of training and minimum tenancy to the organization. Additionally, praise and recognition should continue by providing a flexible working schedule. For example, during the COVID-19 pandemic, primary care nurses are at the front lines in screening/triaging patients; therefore, the nursing managers must support, include, and let them participate in the organization's decision-making, as well giving enough breaks and time may help reduce the nurses' Anxiety.

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KNOWLEDGE, ATTITUDE, AND PRACTICE AS FACTORS RELATED TO SMOKING TENDENCY AMONG GRADE 5 AND 6 ELEMENTARY SCHOOL PUPILS: BASIS FOR A PROGRAM

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Abstract

Smoking is a worldwide epidemic. It is the most modifiable health factor of many non-communicable diseases like cancer, heart disease, type-2 diabetes, stroke, and other chronic diseases. In the Philippines, a 2019 Global Youth Tobacco Study revealed that 12.5% of students aged 13-15 have used tobacco products and 10% have smoked cigarettes. This study determined how the level of knowledge, attitude, and lifestyle practices relate to the smoking tendency among 73 Grades 5 and 6 students chosen through cluster sampling. The study utilized t-tests and ANOVA to analyze the data. The results show that there is a *very high* level of knowledge about smoking among the surveyed participants with a mean of 12.36 ($M = 12.36$; $SD = 1.12$), where the range of high level of knowledge is 12-13. The level of attitude indicates a *positive attitude towards smoking* with a mean of 3.49 ($M = 3.49$; $SD = 0.40$), while the practice shows good lifestyle practices thus, leading to a *low tendency* toward smoking tendency with a mean of 12.05 ($M = 12.05$; $SD = 4.25$), where the low tendency range is 9-13 and the high tendency range is above 13. In this study, the level of knowledge, attitude, and practice shows no significant relationship to smoking tendency. It also indicates that age, gender, religion, parent's civil status, number of family members, and presence of smokers in the house showed no significant difference in smoking tendency. The result of the study is the basis of a program planning module to enhance the attitude and improve the lifestyle practices of Grades 5 and 6 students to prevent smoking initiation and bring a smoking tendency to the lowest level. This study is recommended for reference and guidance in smoking prevention education and awareness for the school and community. The PRECEED-PROCEDE model was used in this study.

Keywords: *smoking, elementary pupil, lifestyle practices, knowledge on smoking, attitude towards smoking*

Smoking is a world epidemic. Its fatalities are more than 8 million worldwide. More than 7 million deaths are directly due to smoking while more than 1.2 million deaths are caused by secondhand smoking (Štěpánek, 2022). In the Philippines, illnesses linked to tobacco use claim the lives of almost 110,000 Filipinos. Smoke from tobacco accounts for 18.3% of all fatalities in men and 6.9% in women. Tobacco usage results in fatalities in more than 23% of men and 10% of women (17.5% total) (Campaign Tobacco-Free Kids, 2023). In 2013 alone, deaths in non-communicable diseases (including lung cancer, cardiac arrest, stroke, and other chronic obstructive pulmonary diseases) among the age group 10-24 years old accounted for 12,909 deaths (54.8% of the total deaths among that age group) (Global Adult Tobacco Survey, 2015). Yet it is the most modifiable health factor of many noncommunicable diseases like cancer, heart disease, type-2 diabetes, stroke, and other chronic diseases. The Global Youth Tobacco Survey (2019) described smoking as both a “pediatric epidemic” and a “pediatric illness” when it comes to youth tobacco usage, where most smokers start using tobacco far earlier than the age of eighteen. (Sarpathy, et al., 2022).

The Global Youth Tobacco Survey (2019) survey reported that 12.5% of students (18.3% of males, and 6.9% of girls) used tobacco products, 16.2% of boys and 5.6% of girls among students smoked tobacco, and 15.3% of boys, 10.0% of pupils, and 5.1% of girls were current smokers among youth aged 13-15. Furthermore, there is a growing number of children and teens using electronic cigarettes or nicotine-delivery electronic devices. It was also reported that 14.1% of students (20.9% of boys, and 7.5% of girls) smoke e-cigarettes.

Since the promulgation of tobacco control laws and other anti-smoking legislations, there has been a significant decrease in trends in tobacco use in the Philippines. Though the survey revealed a decreasing trend in smoking prevalence, there is a growing number of tobacco users in comparison with its population. However, the number of tobacco users although decreasing yet the smoking initiation is getting younger. The trend in smoking initiation is reaching the younger generation at the current time.

Because current surveys target specifically teens or high schoolers, there is a gap of knowledge in smoking tendency among younger students, particularly Grade 5 and 6 students. Therefore, this study aims to determine the level of knowledge, attitude, and practice (KAP) of Grade 5 and 6 students regarding cigarette smoking in relation to smoking tendency. The following are the specific objectives:

1. To describe the demographic and socio-economic profile of the respondents.
2. To determine the level of KAP among the respondents.
3. To identify the smoking tendency of the respondents in terms of tried smoking and planning to smoke as well as the demographic factors.

Data gathered provides understanding and becomes a basis for a program to prevent smoking among Grade 5 and 6 students. The four research questions this study sought to answer are:

1. What are the demographic characteristics of the respondents?
2. What is the level of knowledge, attitude, and lifestyle practices of the respondents?
3. Is there a significant relationship between knowledge, attitude, practice, and smoking tendency?
4. Is there a significant difference in the smoking tendency when the presence of a smoker in the house, age, sex, religion, number of family members, and type of housing are considered?

Methodology

This study was conducted among Grade 5 and 6 students at Area J Elementary School (ARJES) in Barangay Jacinto Lumbreras, Gen. Mariano Alvarez, Cavite. It is one of the eight public elementary schools in this municipality. The criteria for the selection of the respondents were Grades 5 and 6 students studying in ARJES. A total of 100 respondents were sampled and divided into equal numbers among Grades 5 and 6 respectively.

Using random selection, a survey questionnaire based on literature was developed, pilot-tested, and administered to each of the 100 Grade 5 and 6 students. Permissions were obtained before data collection. The data-gathering procedure was approved and supported by the school principal and further assisted by the Guidance Teacher and Grade 5 and 6 Teacher coordinators. Before the data collection from the respondents, consent was secured and signed by the respondents that will provide confidentiality and security of their information. A Memorandum of Agreement was also signed for the conduct of this study and the program.

This study utilized the PRECEDE-PROCEED Model as a framework in the assessment, planning, and evaluation of the program to prevent the initiation of smoking among Grades 5 and 6 students of Area J Elementary School. It is an eight-step planning and assessment framework for intervention programs in health promotion. The PRECEDE-PROCEED Model (Crosby & Noar, 2011) is a thorough framework for identifying health needs and developing, implementing, and analyzing public health initiatives that promote healthy living. The planning framework for a targeted and concentrated public health program is provided by PRECEDE. The framework for implementing and assessing the public health program is provided by PROCEED. To create, administer, and evaluate health promotion and other public health initiatives that will satisfy those requirements, it offers a thorough framework for analyzing health and quality of life needs. Its primary emphasis is placed on results rather than inputs, which is one of its goals and guiding principles. It is designed using a participatory paradigm to take into account the suggestions and assistance of the community.

Results

Of the 100 questionnaire surveys given to 100 Grade 5 and 6 students, 73 questionnaires that were returned were valid. As shown in Table 1, there were 36 Grade 5 respondents comprising 49.3 % while Grade 6 respondents were 37, or 50.7%. The majority of the respondents were males, 69.9%, and only 30.1% were females. Ten of the respondents were 10-11 years old (13.7%), 51 were 12-13 years old (69.9%), and 12 were 14 years old and above (16.4%). Fifty-six respondents were Catholics, nine were Protestants, two were Muslims and six respondents belonged to other denominations. Regarding the educational attainment of parents, 34 respondents shared that their parents only reached the elementary level, 17 said that their parents reached the high school level, 19 said their parents were at the college level, and 3 respondents did not know their parents' educational level. Fifteen respondents said their parents are single, 41 respondents said their parents are married, 6 respondents said their parents are not married, and 11 respondents said their parents were separated.

In terms of family size, 14 respondents said they are a total of 3 family members, 30 respondents had a family size between 4-6, 28 respondents had a family size of 7 and above, while one respondent did not answer the question. Of the type of housing they live in, 36 respondents live in their own house, 17 respondents live in a rented place, one respondent said their house is mortgaged, and 19 respondents live with their relatives. On the daily allowance, 24 respondents received 50 pesos or more, 36 respondents received between 20-49 pesos daily, six respondents said they have 5-19 pesos, while seven respondents said they did not have a daily allowance.

Table 1
Demographic Profile of Respondents

| Profile | Frequency | Percent |
|------------------------------|-----------|---------|
| <u>Gender</u> | | |
| Male | 51 | 69.9 |
| Female | 22 | 30.1 |
| <u>Age</u> | | |
| 10-11 | 10 | 13.7 |
| 12-13 | 51 | 69.9 |
| ≥ 14 | 12 | 16.4 |
| <u>Grade</u> | | |
| Grade 5 | 36 | 49.3 |
| Grade 6 | 37 | 50.7 |
| <u>Religion</u> | | |
| Catholic | 56 | 76.7 |
| Protestant | 9 | 12.3 |
| Islam | 2 | 2.7 |
| Others | 6 | 8.2 |
| <u>Parents' Education</u> | | |
| Elementary | 34 | 46.6 |
| High Scholl | 17 | 23.3 |
| College | 19 | 26.0 |
| Missing | 3 | 4.1 |
| <u>Parents' Civil Status</u> | | |
| Single | 15 | 20.5 |
| Married | 41 | 56.2 |
| Not Married | 6 | 8.2 |
| Separated | 11 | 15.1 |
| <u>Family Size</u> | | |
| 3 | 14 | 19.2 |
| 4-6 | 30 | 41.1 |
| 7 and above | 28 | 38.4 |
| Missing | 1 | 1.4 |
| <u>Type of House</u> | | |
| Owned | 36 | 49.3 |
| Rented | 17 | 23.3 |
| Mortgaged | 1 | 1.4 |
| with Relatives | 19 | 26.0 |

{table continues on the next page}

Daily Allowance

| | | |
|--------------|----|------|
| 50 and above | 24 | 32.9 |
| 20-49 | 36 | 49.3 |
| 5-19 | 6 | 8.2 |
| No Allowance | 7 | 9.6 |

Table 2*Knowledge Level of the Respondents*

| Level | M | SD | Interpretation |
|-------------------|-------|------|----------------|
| Overall Knowledge | 12.36 | 1.12 | Very High |

Interpretation: Very Low (1-5), Low (6-8), High (9-11), Very High (12-13)

Table 2 shows that the overall knowledge has a mean of 12.36 and a standard deviation of 1.12. This means that the level of knowledge of the respondents ($m = 12.36$) shows a very high knowledge level about smoking and its health risks.

Table 3*Belief Level of the Respondents*

| Level | M | SD | Interpretation |
|-------------------|-------|------|----------------|
| Overall Knowledge | 12.36 | 1.12 | Very High |

Verbal Response Interpretation:

1.00 – 1.50: Highly negative (Strongly Disagree), 1.51 – 2.5: Negative (Disagree), 2.51 – 3.5: Positive (Agree), 3.51 – 4.00 Highly Positive (Strongly Agree)

Table 3 shows that the overall belief has a mean of 3.49 and a standard deviation of 0.40. This means that the level of belief among the respondents ($m = 3.49$) shows a positive belief and attitude about smoking that this study reveals.

Table 4*Practice Level of the Respondents*

| Level | M | SD | Interpretation |
|------------------|-------|------|----------------|
| Overall Practice | 12.05 | 4.25 | Low Tendency |

Interpretation of Practice (Overall Tendency):

1.00 – 9.00 – No Tendency; 9.1 – 13.0 – Low Tendency; Above 13 – High Tendency

Table 4 shows that the overall practice has a mean of 12.05 and a standard deviation of 4.25. This means that the level of practice of the respondents ($M = 12.05$) shows a low tendency toward smoking practice. However, the mean of the overall practice of the respondents is bordering already the higher range of the Low Tendency scale. Although with this point, the practice of the respondents still indicates a generally good and positive practice regarding smoking.

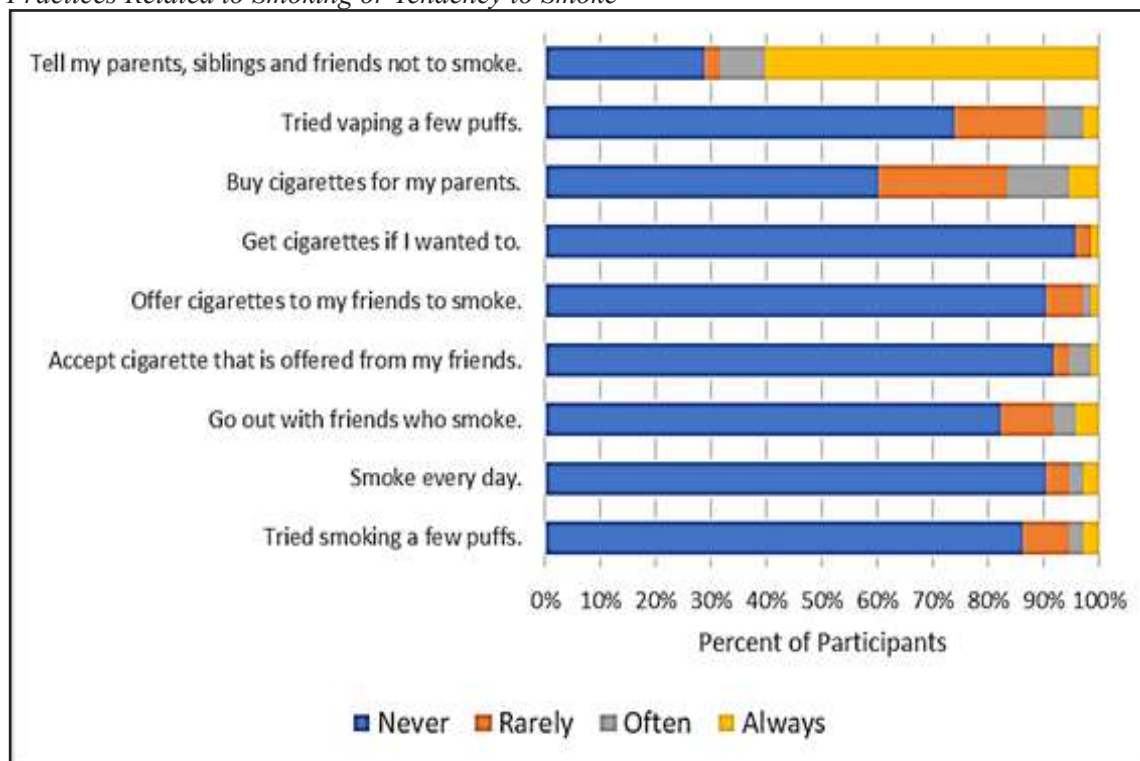
Figure 1*Practices Related to Smoking or Tendency to Smoke*

Figure 1 shows the general description of the respondents' practice related to smoking or the tendency to smoke.

Table 5*Relationship between Knowledge, Belief, and Tendency to Smoke (practice)*

| | Smoking Tendency | | |
|-----------------|-------------------------|----------|-----------------|
| | r | p | VI |
| Knowledge | -.017 | 0.884 | Not Significant |
| Attitude/Belief | .031 | 0.793 | Not Significant |

Table 5 shows the relationship between knowledge, attitude/belief, and smoking tendency. There is no significant linear correlation between knowledge and attitude and the tendency to smoke as the p-value shows ($p > .05$). And though the practice indicates a low tendency to smoke (as Table 4 details), this shows that there is a significant relationship between practice and smoking tendency.

Table 6*Demographic Profiles and Presence of Smokers in the House Profile in Relation to Smoking Tendency*

| Profile | N | Mean Rank | Test Statistics^{a, b} | p | VI |
|----------------|----------|------------------|---------------------------------------|----------|-----------------|
| <u>Sex</u> | | | 450a | 0.171 | Not Significant |
| Male | 51 | 39.18 | | | |
| Female | 22 | 31.95 | | | |

{table continues on the next page}

| | | | | | |
|--|----|-------|--------|-------|-----------------|
| <u>Age</u> | | | 6.143b | 0.046 | Significant |
| 10-11 | 10 | 32.35 | | | |
| 12-13 | 51 | 34.75 | | | |
| 14 and above | 12 | 50.42 | | | |
| <u>Religion</u> | | | 221.5a | 0.553 | Not Significant |
| Catholic | 56 | 33.54 | | | |
| Protestant | 9 | 29.61 | | | |
| <u>Number of Family Members</u> | | | 4.847b | 0.089 | Not Significant |
| 3 | 14 | 27.04 | | | |
| 4-6 | 30 | 36.03 | | | |
| 7 and above | 28 | 41.73 | | | |
| <u>Type of House</u> | | | 1.149b | 0.563 | Not Significant |
| Owned | 36 | 34.50 | | | |
| Rented/Mortgaged | 18 | 40.61 | | | |
| with Relatives | 19 | 38.32 | | | |
| <u>Presence of Smoker in the House</u> | | | 499.5b | 0.188 | Not Significant |
| With smoker | 47 | 39.37 | | | |
| Without smoker | 26 | 32.71 | | | |

Table 6 presents the demographic profiles showing the relationship to smoking tendency. It also shows the presence of smokers in the house profile, a question included in the General Question section of the assessment survey, about smoking tendencies. Overall, there is a significant difference in smoking tendency considering age ($\chi^2=4.847, p=.046$). This means that students who were 14 years old and above have a higher tendency to smoke than the other age group. Other demographic profiles like sex, religion, family size, type of house, and the presence of smokers in the house show no significant differences ($p>0.05$) about smoking tendency.

Table 7
Frequencies of Tried Smoking

| Tried Smoking | Age | Frequency | Percent |
|----------------------|--------------|------------------|----------------|
| Yes | 10-11 | 1 | 1.4 % |
| | 12-13 | 4 | 5.5 % |
| | 14 and above | 2 | 2.7 % |
| No | 10-11 | 9 | 12.3 % |
| | 12-13 | 48 | 65.8 % |
| | 14 and above | 9 | 12.3 % |

Table 7 shows the frequency of respondents who have tried smoking. Those who have tried smoking by all age groups are 7, which is 9.6% of the respondents, while those who have not tried smoking by all age groups are 66, which is 90.4% of the respondents. By age group categories those who tried smoking are as young as 11-12 while most of those who tried smoking fall on age 12-13.

Table 8
Frequencies of Planning to Smoke

| Tried Smoking | Age | Frequency | Percent |
|----------------------|--------------|------------------|----------------|
| Yes | 10-11 | 0 | 0.0% |
| | 12-13 | 4 | 5.5% |
| | 14 and above | 1 | 1.4% |
| No | 10-11 | 10 | 13.7% |
| | 12-13 | 48 | 65.8% |
| | 14 and above | 10 | 13.7% |

Table 8 shows the frequencies of participants who indicated that they were planning to smoke in the future. Five of the respondents, representing 6.9% of the respondents, said that they were planning to smoke while 68 respondents, representing 93.1% of the respondents, said they had no plans to smoke. Of those who indicated their plan to smoke, most were from ages 12-13.

Discussion

This study was conducted to know the significant relationship between knowledge, attitude, and practice about smoking tendencies. As GYTS and GATS show, most smokers begin early in their lives to smoke. Exposure to smoking through parental influence and peer pressure is the most favorable influence to invite children and youth to initiate smoking. In Area J Elementary School, Brgy. Lumbreras, Gen. Mariano Alvarez, Cavite, there are Grade 5 and 6 students who have already started smoking. Although there is information about smoking health risks, respondents tended to slip into a smoking habit that starts earlier in the children's lives.

The findings in this study suggest that there is no significant relationship between knowledge and attitude about smoking tendency (as shown in practice). Practices in relationship to smoking and smoking tendency (as shown in Table 5) show a low tendency among the respondents but that low tendency reaches the upper range of the low tendency scale. Most of the demographic profiles bear no significant difference with the smoking tendency, even with the presence of smokers in the house. However, one demographic profile stands out making a significant difference in the smoking tendency, that is, age. This means that the older the students the more the tendency to smoke as peer pressure or parental modeling may influence them. Further, the assessment shows that those who tried smoking are as young as 11 years old while the majority are 12-13 in age. Furthermore, those who are planning to smoke in the future are mostly aged 12-13.

These levels of elementary students are very informed and have negative attitudes toward smoking, but additional elements have a major influence on their decision to start smoking. If they have never smoked or have tried smoking, they still need to be better informed about smoking and its dangerous effects on the body to prevent smoking. Their skills need to be developed to overcome peer pressure and parental influence that will lead to smoking. This study will become a basis for a smoking prevention program for Grade 5 and 6 students not just at the local school but also for other schools in the whole municipality. This study is, however, limited by the number of the target population (n=73) and the area of scope where only one school becomes the area of study and other schools in the town of Gen. Mariano Alvarez are not included. Another limitation is the shortness of time allotted for the survey and assessment.

Based on the results of the study, it is recommended that the health awareness and education of Grade 5 and 6 students be strengthened against smoking as it is one gateway to other vices. Further studies on the influence of parental modeling and peer influence on smoking tendency on the Grade 5 and 6 elementary students may also be done. It may also be beneficial to enlarge the scope of the smoking prevention program by including most elementary schools as well as the secondary

schools in the entire municipality, especially focusing on skills development and positive decision-making. Lastly, seeking participation from parents or guardians in the conduct of the school-based smoking prevention program is highly encouraged.

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