RESEARCH ARTICLE

# Nurses' competency in Saudi Arabian healthcare context: A cross-sectional correlational study

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## Abstract

**Aim:** To measure the competence and characteristics of nurses in Saudi Arabia delivering health care with significant correlations.

**Design:** A cross-sectional correlational study.

**Methods:** Data were collected in 2019 using a standardized questionnaire, Competency Inventory for Registered Nurses (CIRN), that included a purposive sample of 621 nurses working in Saudi Arabia.

**Results:** A positive evaluation of nurses' overall core competency components is recognizably measured with greater competency levels in their workplace, scoring highest in "legal/ethical practice" while "critical thinking and research aptitude" represented the lowest dimension. Nurses' marital status, years of graduation, length of service, duty hours and nurse–patient ratio affect their competency level. Nurses' competence and their sociodemographic characteristics are significantly correlated attributes. Medical ward nurses are likely to have the greatest competence in delivering safe nursing care within training's legal borders.

**KEYWORDS**
competency dimensions, healthcare context, healthcare services, nurses' competency, nursing competency, Saudi Arabia

## 1 | INTRODUCTION

Saudi Arabia is still challenged by the shortage of nurses despite the improvement of its healthcare system's overall efficiency (Tandon et al., 2000). According to the Ministry of Health (MOH), Saudis only constitute 38% of the total workforce, in which 32.3% are nurses (Almalki et al., 2011). In 2012, the MOH reported that expatriate nurses accounted for 63.82% of the Saudi Arabia nursing workforce, most were from the Philippines or India. Because of the diverse nursing preparations of nurses working in Saudi Arabia, professional competencies in terms of "critical thinking and research aptitude," "clinical care," "leadership," "legal and ethical practice," "professional development," "interpersonal relationships" and "teaching and coaching" may somewhat be varied; thus, will affect the delivery of healthcare services to Saudi population.

The concept of nursing competency has been extensively discussed in various literature in terms of quality nursing care and safety. Evidence highlights the importance for organizations to give attention to professional competency in nurses to maintain safety and quality service for its clientele (Heydari et al., 2016). Although

the development of professional nursing competency is multifactorial, specific factors related to nurses' demographics, professional service and environment still needs to be established further (Devera & Maniago, 2017).

This is the authors' first attempt to explore and investigate the professional competencies of nurses and how it varies from their sociodemographic information in the Saudi Arabian context. The outcomes of this study aimed to provide baseline data for quality management, leadership planning, educational programme, curriculum improvement, future research and policy formulation to augment nurses' competencies working in Saudi Arabia.

## 1.1 | Background

Nursing competency is a "complex integration of knowledge including professional judgment, skills, values, and attitude. It is an intelligent practical skill set that integrates or combines different factors and issues in complex ways, specific to each circumstance" (Fukada, 2018). The worldwide perspective of professional nursing competency is focused on providing safe and quality service. It is the responsibility of each professional nurse to be competent in delivering the skills sets required to improve the quality of patient care and increase patient satisfaction (Nobahar, 2016). Moreover, each healthcare system needs to ensure that its human health resource for nurses are sufficient to ensure that they are professionally empowered and competent (Carr, 2004). All member countries around the world including Saudi Arabia are required by the World Health Organization (WHO, 2016) to monitor and enforce their efforts to improve and equip nurses with professional skills.

The healthcare system of Saudi Arabia has been challenged by disease structure changes, ageing population and shortage of healthcare professionals. Accordingly, care providers should manifest professional competencies that will adapt to the essentials of the healthcare system. Nursing as a distinct profession has always challenged on how it can create a significant impact on society. Thus, making nursing competency a primary focus for professionals will advance the country's healthcare services.

Sustaining patient quality care is an indispensable responsibility of a competent nurse (Feliciano et al., 2019). Medical errors, negligence or malpractice built from incompetence can risk patients' lives. Growing rates and the grounds of nurses' medical errors have recently become a substantial concern as they affect the mortality and disability of numerous individuals annually (Kahriman & Ozturk, 2016). Competence is never simply knowing, but to act responsibly with the acknowledgement that one knows how to mobilize, integrate and transfer resources, with the requisite knowledge and professional competencies (Sousa & Alves, 2015). Therefore, it must be recognized that whatever inaccuracies, negligence or malpractices arise from incompetence can risk patients' lives. Measuring nurses' competencies are challenging and few works of literature exist on this subject. A literature review conveying an understanding of nursing competencies in dementia care found out that there is no

framework for dementia competency within care venues (Traynor et al., 2011). A study on geriatric competency assessment points out that areas of focus should be drawn based on applicability and prominence within a healthcare facility (Purvis et al., 2015). Another study found that self-competence influences the quality of nursing interventions (Desbiens et al., 2012). Moreover, competency is also relevant to retaining the nursing workforce and turnover intention (Takase et al., 2015).

Nursing competency has been integrated likewise in other settings. Studies have been conducted to develop an effectual model for enhancing undergraduate nursing student competency (Hsie & Chen, 2018; Kang, 2016; Lavoie et al., 2018), telehealth nursing (Smith et al., 2018), graduate nurses in transition programmes (Lima et al., 2016), specialized addiction settings (Ling et al., 2017) and home healthcare (Gabbedon, 2016). On the other hand, limited studies have reported on the nursing competencies of nurses working in primary healthcare settings (Halcomb et al., 2016). However, one study develops entry-to-practice public health nursing competencies with five competency statements and 19 indicators (Schofield et al., 2018).

Using previously acquired knowledge, one can behaviourally act appropriately (Lowen et al., 2015). However, one report examining competency and found that 88.5% of the claims filed on registered nurses for malpractice between 2010–2014 (Nurses Service Organization, 2016) were allegedly caused by nurses who were fatigued, tired or stressed. This in turn led to nurses' incapability of dispensing a variety of essential quality care and great potential of creating errors leading to harm, or even worse, patient mortality. Subsequently, a great challenge is seen in medication administration inconsistencies and inaccuracies stemming from a healthcare management deficit (Wheeler, Hopcroft & Stapleton, 2018). Moreover, the public data of 1990–2014 National Practitioner Data Bank are used to identify that the maximum portion of malpractice claims linking nurse practitioners was diagnosis-related (41.46%) and treatment-related (30.79%) (Sweeney at al., 2017). These figures suggest that the extent of malpractice is far too large to be left unnoticed. These sorts of unfortunate mishaps can be prevented, if not reduced, by the provision of accurate care by competent healthcare providers. Nurses' actions will have a direct and often significant effect on the prognosis of patients. Thus, competence must be maintained or enhanced for the continued delivery of quality care.

## 1.2 | Aim

The study aimed to measure nurses' competence in the delivery of healthcare services, this study precisely intents to:

- identify nurses' sociodemographic characteristics as to their age, gender, marital status, nationality, number of years since graduation, hospital region; present field/unit/area, length of service, duty hours and nurse–patient ratio;
- assess their competency that relies on seven dimensions (critical thinking and research aptitude, clinical care, leadership, legal and

ethical practice, professional development, interpersonal relationships and teaching and coaching); and

- determine the significant correlations between nurses' sociodemographic characteristics and their competency

## 2 | METHOD

### 2.1 | Design

A cross-sectional, correlational design was appropriately utilized to assess nurses' competence and for identifying the significant correlations between variables at a fixed point in time (Polit & Beck, 2017). This design permits simultaneous largely to collect data gathering at multiple sites across Saudi Arabia.

### 2.2 | Sampling

Using G-Power analysis version 3.2, a priori type of power analysis with a 0.5 α err prob, 0.80 power (1- β err prob) and 0.244 effect size (Uttley, 2019) generated a total sample size of 617 respondents. However, the study exceeded the expected sample size with a purposive sample of 621 nurses, aged between 21–55 years. Respondents were selected according to the following criteria: (1) aged 21 to 60 years, either male or female, Saudi and non-Saudi registered nurses in different areas of discipline, (2) are working in any affiliated Ministry of Health (MOH) healthcare facilities for 12 months and above as it completes the transition to being a competent nurse (Flippo, 1993), (3) can speak in English either in different proficiency levels and (4) voluntarily agreed to partake in the study.

However, nurses in administrative positions (e.g. managers and supervisors) and working less than six months' probation period were excluded from the study. Respondents' review and approval of informed consent form signal data collection.

### 2.3 | Setting

This quantitative study was centred on several MOH-affiliating secondary and tertiary healthcare facilities without further exclusions found in five regions of Saudi Arabia, specifically in Central (Riyadh and Qassim), Western (Tabuk, Madinah, and Makkah), Northern (Hail), Southern (Najran) and Eastern (Dammam) territories.

### 2.4 | Data collection

Upon approval from the Institutional Review Board, data were gathered from December 2018–March 2019 in the different

MOH-affiliated hospitals. Participants answered survey questions during their break time inclusive to their duty or working hours and completed surveys within 15 min. Tools with unanswered items as well as those respondents who discontinued participation during data gathering were eliminated. Survey data were collected a week or more as it depends on participants' completion. All data were scored, tallied, tabulated and analysed statistically.

### 2.5 | Instrument

A self-evaluated survey tool was accessed after obtaining electronic mail permission to utilize for data collection (Ming, 2005). The survey has two sections that include sociodemographic characteristics and the Competency Inventory for Registered Nurses (CIRN) with a holistic nursing competency scale Cronbach alpha score of 0.967 (Takase and Teraoka, 2011). The first part discussed the respondents' demographic and work-related characteristics, including personal (age, gender and marital status), professional (length of service, number of years from graduation and duty hours) and environmental (nurse–patient ratio and present field/unit/area) factors. The second part included the use of CIRN, a 59-item standardized questionnaire (Ying et al., 2014; Ming, 2005) containing the seven dimensions: critical thinking and research aptitude (10 items), clinical care (10 items) leadership (10 items), legal and ethical practice (8 items), professional development (6 items), interpersonal relationships (8 items), and teaching and coaching (7 items). The adapted questionnaire utilized a five-point Likert scale (0 = not competent, 1 = slightly competent, 2 = somewhat competent, 3 = competent enough and 4 = very competent). Although CIRN has been confirmed as an assessment tool among nurses in mainland China, this takes a potential cross-cultural application. However, a further pilot study was conducted in 40 nurses from a private secondary healthcare facility as purposive samples which later excluded in the actual data gathering and led to further assessment of the applicability of the questionnaire in the Saudi Arabian healthcare context with a Cronbach Alpha score of 0.908, indicating a highly reliable and internally consistent instrument.

### 2.6 | Analysis

SPSS version 24 software was utilized. Specifically, descriptive statistics such as frequency ($f$) and percentage distribution (%) were used in determining nurses' sociodemographic characteristics. Data were described using mean ($\bar{x}$) and standard deviation ($SD$). ANOVA and $t$ tests were likewise used to examine the relationship between nurses' characteristics and their competency. A univariate test of significance, as a general linear analysis of variance, was accomplished to examine the effect of nurses' characteristics on their competency in delivering healthcare services. The $p$-values of .05, .01 and .001 were considered significant.

## 2.7 | Ethics

The protocol of the study was submitted and reviewed by the Institutional Review Board of King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia with an approval number of **IRB 18-577E, FWA00018774** on 11 November 2018. Along with a cover letter and an informed consent form without any forms of identifiers, entire respondents who willingly agreed to participate had given ample time to read and raise their concerns before signing the consent form. The right to self-determination, confidentiality, anonymity, benefits and risks of the study were highlighted. It is further emphasized that the study is an absolute voluntary and can refuse or depart at any time without being penalized or losing any benefits.

## 3 | RESULTS

### 3.1 | Nurses' sociodemographic characteristics

Sociodemographic data included nurses' gender, marital status, nationality, present field/unit/area, hospital region, age, years graduated, length of service, duty hours and nurse-patient ratio. In Table 1, it presents that most of the respondents are between 21–60 years old ($\bar{x}$ = 29.04, SD ± 1.27), predominantly married (n = 375 or 60.4%), female (n = 464 or 74.7%), and non-Saudi registered nurses (n = 581 or 93.6%) that graduated for 1–36 years ($\bar{x}$ = 7.07, SD ± 1.27). Most employed as medical ward nurses (n = 147 or 23.7%) in the northern region (n = 265 or 42.7%) for 1–30 years in service ($\bar{x}$ = 1.90, SD ± 1.17) working for less or more than 8 duty hours ($\bar{x}$ = 8.07, SD ± 0.41) with 1:5–21 nurse–patient ratio ($\bar{x}$ = 1.51, SD ± 0.33).

### 3.2 | Self-evaluated nurses' competency in seven dimensions

Table 2 exemplifies the nurses' competency in seven dimensions. An overall mean score of 3.35 (SD ± 0.61) for their overall evaluation was reported, indicating that the nurses had a positive evaluation of their overall core competency components. Among the seven-dimension scale, "legal/ethical practice" was the highest mean score ($\bar{x}$ = 3.39, SD ± 0.60) reported, while "critical thinking and research aptitude" ($\bar{x}$ = 3.33, SD ± 0.62) were rated as the lowest dimension competencies by the respondents.

### 3.3 | Significant relationships between nurses' sociodemographic characteristics and their self-evaluated competency

Table 3 illustrates the relationship between nurses' sociodemographic characteristics towards their dimensions of competency

**TABLE 1** Nurses' sociodemographic characteristics

| Sociodemographic characteristics | | F | % |
|---|---|---|---|
| Gender | Male | 157 | 25.3 |
| | Female | 464 | 74.7 |
| Marital status | Single | 226 | 36.4 |
| | Married | 375 | 60.4 |
| | Separated | 13 | 2.1 |
| | Widowed | 7 | 1.1 |
| Nationality | Saudi | 40 | 6.4 |
| | Non-Saudi | 581 | 93.6 |
| Present field/unit/area | Surgical | 78 | 12.6 |
| | Medical | 147 | 23.7 |
| | OB/nursery | 36 | 5.8 |
| | Critical care | 79 | 12.7 |
| | Operating/delivery | 63 | 10.1 |
| | Acute kidney | 31 | 5.0 |
| | Outpatient | 45 | 7.2 |
| | Emergency | 103 | 16.6 |
| | Paediatric | 29 | 4.7 |
| | Rehabilitation | 10 | 1.6 |
| Hospital region | Central | 207 | 33.3 |
| | Western | 125 | 20.1 |
| | Northern | 265 | 42.7 |
| | Southern | 14 | 2.3 |
| | Eastern | 10 | 1.6 |
| | **Range** | **Mean** | **SD** |
| Age | 21–60 years old | 29.04 | 1.27 |
| Years graduated | 1–36 years | 7.07 | 1.48 |
| Length of service | 1–30 years | 1.90 | 1.17 |
| Duty hours | <8 to > 8 hr | 8.07 | 0.41 |
| Nurse-patient ratio | 1:5 and below to 1:21 and above | 1.51 | 0.33 |

[†]F frequency
[†]% percentage
[†]SD standard deviation

**TABLE 2** Self-evaluated nurses' competency in seven dimensions

| Competency dimensions | Mean | SD |
|---|---|---|
| Critical thinking and research aptitude | 3.33 | 0.62 |
| Clinical care | 3.35 | 0.61 |
| Leadership | 3.36 | 0.62 |
| Interpersonal relationship | 3.36 | 0.58 |
| Legal and ethical practice | 3.39 | 0.60 |
| Professional development | 3.34 | 0.61 |
| Teaching–coaching | 3.35 | 0.63 |
| **Overall** | **3.35** | **0.61** |

[†]SD standard deviation

**TABLE 3** Significant relationships between nurses' sociodemographic characteristics and their self-evaluated competency

| Demographic and work-related characteristics | Nurses' competency | | |
|---|---|---|---|
| | Mean $\pm$ SD | Statistical test | p |
| Gender | | | |
| Male | 3.20 $\pm$ 0.70 | t = 3.834 | .000*** |
| Female | 3.40 $\pm$ 0.52 | | |
| Marital Status | | | |
| Single | 3.28 $\pm$ 0.65 | F = 1.789 | .148 |
| Married | 3.39 $\pm$ 0.54 | | |
| Separated | 3.41 $\pm$ 0.39 | | |
| Widowed | 3.51 $\pm$ 0.29 | | |
| Nationality | | | |
| Saudi | 3.38 $\pm$ 0.57 | t = 0.350 | .726 |
| Non-Saudi | 3.35 $\pm$ 0.57 | | |
| Present field/unit/area | | | |
| Surgical | 3.56 $\pm$ 0.39 | F = 7.060 | .000*** |
| Medical | 3.17 $\pm$ 0.64 | | |
| OB/nursery | 3.19 $\pm$ 0.76 | | |
| Critical care | 3.40 $\pm$ 0.48 | | |
| Operating/delivery | 3.53 $\pm$ 0.42 | | |
| Acute kidney | 3.65 $\pm$ 0.37 | | |
| Outpatient | 3.40 $\pm$ 0.53 | | |
| Emergency | 3.30 $\pm$ 0.58 | | |
| Paediatric | 3.45 $\pm$ 0.69 | | |
| Rehabilitation | 2.66 $\pm$ 0.45 | | |
| Hospital region | | | |
| Central | 3.13 $\pm$ 0.47 | F = 116.918 | .000*** |
| Western | 2.98 $\pm$ 0.65 | | |
| Northern | 3.77 $\pm$ 0.10 | | |
| Southern | 2.28 $\pm$ 0.07 | | |
| Eastern | 2.66 $\pm$ 0.45 | | |
| Age | | | |
| 21–60 years old | 29.04 | F = 2.075 | .054 |
| Years graduated | | | |
| 1–36 years | 7.07 | F = 4.096 | .003** |
| Length of service | | | |
| 1–30 years | 1.90 | F = 13.603 | .000*** |
| Duty hours | | | |
| <8 to > 8 hr | 8.07 | F = 3.063 | .028* |
| Nurse-patient ratio | | | |
| 1:5 & below to 1:21 & Above | 1.51 | F = 0.520 | .595 |

[†]SD standard deviation.
*Significant at 0.05 level.
**Significant at 0.01 level.
***Significant at 0.001 level.

is illustrated. Results revealed that male nurses exhibited higher self-reported competency evaluation than female nurses (t = 3.83, $p$ = .000). As to assigned fieldwork (unit assignment) (F = 7.06, $p$ = .000) and hospital region (F = 116.92, $p$ = .000), findings suggest positive results when compared to their self-rated competencies. Furthermore, years graduated (F = 4.10, $p$ = .003), length of service (F = 13.60, $p$ = .000) and duty hours (F = 3.06, $p$ = .028) were remarkably significant to their competencies.

## 3.4 | Univariate test of significance towards CIRN seven dimensions

The differences between nurses' sociodemographic characteristics and self-evaluation report on their competency using univariate analysis are highlighted in Table 4. As illustrated, the present fieldwork ($p$ = .001), hospital region ($p$ = .000), years graduated ($p$ = .038) and nurse–patient ratio ($p$ = .000) are statistically significant to nurses' dimensions of competency.

## 4 | DISCUSSION

In Saudi Arabia, most registered nurses demonstrated the highest score in legal and ethical practice nursing competency. Studies in South Korea, the Philippines and the United States support the present study. Ethical nursing competency is highest among nurses in Seoul (Kim & Choi, 2019). Likewise, Filipino nurses demonstrate high competencies in ethical and legal practice, providing a safe nursing practice while conducting patient care (Feliciano et al.,2019, 2020). In New Jersey, nurses perceive themselves as most competent in the areas of value-based nursing care and legislation in nursing (Pascarelli, 2017). A very high mean score of self-assessed competency in terms of ethical, moral and legal responsibilities is observed among entry-level staff nurse respondents in both public and private hospitals (Ramos, 2017). Growing rates and grounds of nurses' medical errors have recently occurred which constitute a substantial concern as they affect mortality and disability of numerous individuals annually (Kahriman & Ozturk, 2016). Inaccuracies, negligence or malpractices made from incompetence can risk patients' lives. Therefore, nurses are committed to sworn obligations as stipulated in the nursing law and nursing profession. What's more, nurses comply with policies laid down by institutions and organizations advocating the bill of rights of patients, which is primarily based on legal and ethical principles. Registered nurses must possess the requisite knowledge, skills and abilities in terms of legal and ethical practice to fully practice the nursing profession with great independence (Feliciano et al., 2019, 2020). Also, an awareness of their responsibilities to perform professional obligations in compliance with prevailing rules and regulations must include acknowledgement of ethical and moral principles (Aiken, 1994). Thus, nurses must deliver care that is within the legal borders of their training and within the margins of organization policies and procedures whereby permission is granted

| Effect | Sum of squares | df | Mean square | F | p |
|---|---|---|---|---|---|
| Gender | 0.325 | 2 | 0.162 | 0.696 | .499 |
| Marital Status | 0.448 | 3 | 0.149 | 0.640 | .590 |
| Nationality | 0.024 | 1 | 0.024 | 0.104 | .747 |
| Present field/unit/area | 6.271 | 8 | 0.784 | 3.360 | .001*** |
| Hospital region | 29.932 | 3 | 9.977 | 42.765 | .000*** |
| Age | 0.934 | 6 | 0.156 | 0.667 | .676 |
| Years graduated | 4.177 | 9 | 0.464 | 1.990 | .038* |
| Length of service | 1.223 | 5 | 0.245 | 1.048 | .388 |
| Duty hours | 1.338 | 3 | 0.446 | 1.912 | .126 |
| Nurse-patient ratio | 10.304 | 3 | 3.435 | 14.721 | .000*** |

[†]a. R squared 0.470 (adjusted 0.429).

*Significant at 0.05 level.

**Significant at 0.01 level.

***Significant at 0.001 level.

by a legal authority to perform an act, which without such permission, would be illegal, a trespass, a tort or otherwise not allowable (Haynes et al., 2004; Hood et al., 2003). Furthermore, competency always includes providing nursing care that delivers safe patient care and protects clients from any harm or injury (Wirtz et al., 2003). Thus, the need to base one's nursing practice on legal standards, national nursing law and a professional code of ethics among nurses is very vital in preventing ethical dilemmas, moral distress and legal consequences. After all, the nurse is held accountable and responsible for his/her professional nursing practice.

However, the majority of the registered nurses in Saudi Arabia revealed the lowest "critical thinking and research aptitude" nursing competency score. Likewise, this is considered the lowest competency among the subcategories of nursing competency among nurses in Seoul, South Korea (Kim & Choi, 2019). In the Philippines, Filipino registered nurses also demonstrate the lowest or one of the lowest professional nursing competencies in terms of research (Feliciano et al., 2019, 2020). Registered nurses must show the ability to render nursing care using a scientific basis or evidence-based references. Evidence-based care denotes to the utilization of the best available evidence and integration of research findings in basing one's clinical practice. Unfortunately, nurses have the lowest competency in critical thinking and research aptitude. Thus, re-educating nurses through evidence-based effective clinical nursing education is necessary to guarantee the establishment of high performance for healthcare service beneficiaries substantiated in a higher level of nursing competency (Kim & Choi, 2019). The study findings that nurses displayed the lowest nursing competency score in critical thinking and research aptitude can be attributed to traditional-tailored nursing care and the fact that some nurses are unwilling to participate and assume research in their expertise area and fail to utilize the research findings in actual practice. The causes for lower research-related competency are undoubtedly the inappropriate attitudes and lack of self-efficacy regarding the use of research- and evidence-based practices. Thus, the promotion of research-related

behaviours among nurses at any point of care can improve the nursing practice in clinical settings (Karami et al., 2017).

On the contrary, this finding is inconsistent with the findings in Iran and Indonesia. Specifically, nurses assigned in neonatal intensive care units (NICU) in Iran demonstrate the highest levels of critical thinking and research attitude competence. Accordingly, nurses need such competencies in performing nursing activities and providing good quality nursing care in intensive care units (Mirlashari et al., 2016). The aptitude to deliberate critically is a key predictor and a significant factor that contributes to the development of nurses' competencies. Competence development is an ongoing process of cultivating overall knowledge, attitudes and skills and is persuaded by myriad factors including critical thinking. Hence, critical thinking abilities aid nurses to acquire optimal competencies in providing safe nursing care to patients (Rizany et al., 2018).

Comprehending which factors contribute to competency assessment is essential in determining the educational prerequisites and objectives concerning nurses' competence development. A study in Japan indicated that personality traits and individual characteristics were significantly related to workplace learning and self-rated nursing competency among staff nurses. A suitable working environment that considers the variation in nurses' individuality traits is necessary so that competence can be developed and improved. Thus, a vigilant consideration of nurses' traits is indispensable to create an appropriate environment for them (Takase et al., 2018).

Maintaining high standards of care is primarily the ultimate goal of why nurses should recognize their level of competence. Between work environments, nurses' level of competence may vary according to several factors. In a prior investigation, it was found out that the self-rated level of competence of nurses was positive when compared to their profile (Meretoja et al., 2004). Similarly, it is perceived that a high level of self-perceived competence of nurses is essential to manage patient situations in different fieldwork assignments (Donilon, 2013). Despite the similarities of previous studies, a recent investigation in the United Arab Emirates opposed that self-rated

competency in nurses is important when assigned in different hospital units or areas (Aqtash et al., 2017).

In the inferential analysis, nurses across all health regions results revealed positive results when compared to the nurse's profile. Findings corroborate a study of about patient safety competencies of undergraduate nurses in 7 Chinese administrative provincial regions (Huang et al., 2020). In another research, it affirmed a previous study of in Thailand about self-rated nursing competency. They found out that nurses regardless of their region showed a significant difference concerning to their competencies (Sawaengdee et al., 2016).

Furthermore, a study in Thailand reveals that the factors significantly related to generalist nursing competency are constituted of sociodemographic variables, professional-related variables and work environment variables. The work environment variables come with a high correlation coefficient related to nursing competence. Therefore, nursing managers ought to pay close attention to such variables to advance nursing competency. Additionally, the need to deliberate ways to deliver a supportive work environment to uphold nurses' competency is another significant importance (Liu & Aungsuroch, 2017).

The necessity for meeting complex and dynamic patients' needs in intensive care units where nurses' competence is a substantial concern (Mirlashari et al., 2016). As higher thinking ability is strongly correlated with superior competencies, functioning in an intensive care unit proved to be a statistically significant variable in a cross-sectional study of nurses where highest competency level is noted in terms of critical thinking, research aptitude and interpersonal relations (Nurhidayah & Nurbaiti, 2015; Rizany et al., 2018). Such finding is in congruence with a study of Filipino nurses in Saudi Arabia that implicates work setting as statistically related demographic that influences cognitive competency due to the required critical thinking ability (Alsulaimani et al., 2014). Training prepares nurses to deal with the more complex workload and environment and to enhance not only their cognitive ability per se but also the overall competence in ensuring patient safety as the top priority (Feliciano et al., 2019; Kim & Kim, 2014, 2015).

As motivation greatly impacts competence and resultant productivity, higher and positive perceptions on the workplace's shared values, work influence and one's involvement directly correlate with work motivation, satisfaction and competence (Alhakami & Baker, 2018; Kim & Kim, 2014). Additionally, low motivation and occupational burnout are negative predictors of competency (Karami et al., 2017).

In regard to length of service, findings showed a positive association with their level of competencies. Similar investigations suggest that experienced nurses are more competent compared to novice nurses (Aqtash et.al, 2017; Meretoja et. al, 2004; Tsang, 2017). Experienced nurses showed increased competence over the years, whereas newly hired nurses should have more practice to improve their level of competency. Indeed, the level of competencies improves as nurses acquire relevant experience throughout the years. Further, years of clinical experience provides opportunities for nurses to enhance their professional competence (Takase, 2012).

In South Korea, a study states that novice nurses are new nurses (i.e. those with <1 year of experience) and are not assumed to have fully developed their competencies, whereas the competencies of nurses with >3 years of experience are largely considered to be related to nurses' situations, such as education and length of service experience. Furthermore, nurses with 1–3 years of experience demonstrated considerably enhanced clinical reasoning, communication, procedural competency and documentation than did nurses with <1 year of experience. Thus, core competency depends on the nurse's length of service experience (Kim & Kim, 2015; Ko & Yu, 2018). In addition, the years of clinical experience of a registered nurse had a suggestive relationship with the caring competency subscale and had statistically significant associations with self-perceived nursing competency. Simply put, the years of experience indicate whether an individual has sufficient expertise to meet the responsibilities necessary to perform his or her job as a professional nurse.

Duty hours are remarkably significant to their competencies. Direct patient care clinical hours are indispensable for nurses to meet the praised nursing competencies and be able to patient and family care. Thus, an essential number of clinical hours defines the clinical experiences of staff nurses (Bowling et al., 2018). In this study, duty hours yielded positive results on the level of competency of staff nurses. Specifically, findings showed that their level of competency remained high regardless if they attended an 8 hr or less nursing shift or more than 8 hr of duty. Thus, working hours as a contributing factor is relevant to maintain a high level of competency. However, recent substantial evidence suggests that the longer the working hours, the more detrimental to the competencies of staff nurses (Jarrar et al., 2019; Son et al., 2019). Research also reports that the errors are more likely to occur when a task exceeds twelve hours (Rogers et al., 2004). Emotional exhaustion and depersonalization are common among nurses who work for more than 8 hr and do regular night shifts (Lang et al., 2010).

While gender between the profession has been widely researched, generally, female nurses had shown greater scores in various studies involving nurse professional competence (Gardulf et al., 2016; Heydari et al., 2016). However, in a study of undergraduate nurses in 2013, nursing competence of male nurses in a four-year baccalaureate programme yielded significant results over female nurses (Zamanzadeh et. al., 2013). Similarly, in a systematic review of factors affecting nursing competencies, findings suggest that male nurses' competencies are higher than female nurses (Carlsson, 2019; Rizany et al., 2018). Conflicting results report concerning male nursing students perceiving higher competence in "managing safety risk" and "understanding human and environmental factors" than the female nursing students. In one study, female students are reported to have a higher level of patient safety competence than male nursing students (Colet et al., 2015). However, a self-reported patient care questionnaire obtained from nurses and patients reveal no significant difference between male and female nurses (Ekstrom, 1999). The mixed results could be due to gender bias and cultural diversity (Anthony, 2004). While anxiety has the opportunity to cause poor clinical experience, a cross-sectional study of nurses and

students reveals a higher anxiety level among female participants, which negatively affects clinical practice and competence (Gemuhay et al., 2019).

Placement of nurses in an environment that fosters growth and development is the key to continuing and developing competence specifically through an efficiently managed organization (Rizany et al., 2018). The external environment largely influences the ever-dynamic competence development of nurses (Rizany et al., 2018; Salie & Martin, 2014). Although there is no substantial association between professional competency and organizational commitment among nurses, the literature suggests that the former is an important predictive factor for organizational commitment towards the quality improvement of healthcare delivery (Karami et al., 2017). Group cohesiveness in organizations fosters teamwork and deepens emotional relations among colleagues geared towards greater productivity and satisfaction (Kim & Kim, 2014). It is imperative to imply as well that nurses can, in return, positively influence and change the environment, suggesting reciprocity (Feliciano et al., 2019, 2020).

It is vital to have a well-planned clinical placement of students to allow for theoretical knowledge application, skills development, clinical reasoning and assumption of professional roles (Gemuhay et al., 2019). Additionally, nurse managers have crucial roles to play in promoting competence development of nurses through programme support systems and structures that include continuing education, mentorship and teaching programmes (Feliciano et al., 2019; Kim & Kim, 2014; Rizany et al., 2018).

Voicing apprehensions related to proficiency and concerns on education-clinical competency disconnection among newly graduated nurses has been well recognized in literature amidst hospital's desire to employ only qualified and competent nurses in meeting the growing demands for healthcare workforce (Wong, 2016; Nehrir et al., 2016; Salie & Martin, 2014). Before the employment of nurses in intensive care units, it is a requirement for recruitment hospitals to ensure that they have been exposed to general wards for at least five years (Mirlashari et al., 2016). This requirement is in line with the idea that the provision of holistic and safe care emanates from knowledge integration, skill performance and critical thinking that can be achieved over time through clinical experiences (Wong, 2016). Duration of work experience has a significant direct correlation with professional competency through the utilization of past experiences that are useful for empowering and motivating (Karami et al., 2017; Kim & Kim, 2014).

The ability to make critical care decisions is lower, especially among newly hired professional nurses, which denotes that adequate preparation through staff development is the key to competence in dealing with a more complex working environment to successfully meet the clienteles' dynamic needs, where synchronicity of both knowledge and clinical core competencies undergo effective integration (Alhakami & Baker, 2018; Nehrir et al., 2016; Salie & Martin, 2014). As educational attainment has a direct significance with competence development, the increasing years of experience acquired since graduation allow for professional competence, which is fundamentally essential to develop over time through

staff development programmes offered by the hospitals (Karami et al., 2017; Rizany et al., 2018).

Higher nursing competency level, specifically in terms of critical thinking, research aptitude and interpersonal relationships has been well established in intensive care units where the nurse–patient ratio is slightly lower than the general wards and other hospital departments (Mirlashari et al., 2016). Nurses, irrespective of the assigned area, are expected to make critical decisions that greatly impact positive patient outcomes (Feliciano et al., 2019; Wong, 2016). While the high nurse–patient ratio is not conducive for nurses to maximally provide professional service and fulfil compassionate roles, an adequate nurse–patient ratio provides an opportunity for nurses to utilize continuous effective clinical learning and development (Gemuhay et al., 2019). Although quality of care is highly influenced by workload, commitment and making qualified decisions in accumulating work experience best influence professional competence, which is undeniably the greatest predictor of patient safety outcomes (Feliciano et al., 2019; Kim & Kim, 2014).

## 4.1 | Limitations

In a more complex study design, conducting interventional studies using random sampling, instead of purposive sampling, in a larger population is highly recommended to prevent restrictions to the generalizability of the findings.

## 5 | CONCLUSION

This study highlighted nurses' competency in delivering healthcare services in the Kingdom of Saudi Arabia. Nurses' competence and their sociodemographic characteristics are significantly correlated attributes. Nurses evaluated greater competency levels in their workplace. Staff nurses in the medical ward have greater levels of competency. Meanwhile, marital status, fieldwork, years since graduation, length of service, duty hours and nurse–patient ratio do affect their competency level.

## 5.1 | Relevance to clinical practice

The findings of the study offer an exceptional hypothetical groundwork that magnifies on former understanding and information on influences that affect the nurses' competency level according to dimensions. More so, it may provide baseline data for quality management, leadership planning, educational programme, curriculum improvement, future research and policy formulation to augment nurses' competencies working in Saudi Arabia.

The issue of nurse staffing is a major concern worldwide because aspects of nursing other than staffing have obtained less attention (Clarke & Aiken, 2008). A smaller, but rising number of researches suggests that higher nurse education is significantly associated with

better patient outcomes. Specifically, evidence implies that lower patient-to-nurse ratios (Kane et al., 2007; Needleman et al., 2011), a greater quantity of nurses in the hospital with at least a baccalaureate level of education (Kendall-Gallagher et al., 2011; Tourangeau et al., 2007; Van Den Heede et al., 2009), and a better nurse care environment are significantly associated, independently and additively, with a decrease in the patient mortality rate (Aiken et al., 2008; Friese et al., 2008). However, absolute evidence has been deficient in the association of a better nurse care environment on better patient outcomes. Other stakeholders' express uncertainties about whether the nurse care environment has a substantial impact on patient outcomes after taking into consideration patient-to-nurse ratios (Aiken et al., 2008). Thus, forging a staff of competent nurses through human resource development programmes and continuing professional activities will significantly impact better patient outcomes.

## CONFLICT OF INTEREST

All authors declare no potential competing sources of conflict of interest in this academic scholar project.

## DATA AVAILABILITY STATEMENT

The analysed data set utilized in this original research article is readily available upon rational request from the corresponding author. However, no otherwise additional data are available for sharing.

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