

**EVALUATION OF CLINICAL COMPETENCIES AND ITS RELATED FACTORS  
AMONG OF EMERGENCY NURSES IN PUBLIC HOSPITALS IN THE MIDDLE  
REGION OF JORDAN: A CROSS-SECTIONAL STUDY****Akram Ahmad Al. Omoush<sup>1\*</sup>, Zainab Mohd Shafie<sup>2</sup>, Audai Naji Al-Samdi<sup>3</sup>, Mohammad Ariff Tengku<sup>4</sup> and Nyi Naing<sup>4</sup>**<sup>1</sup>Ph.D. Scholar, Faculty of Medicine, Universiti Sultan Zainal Abidin, Terengganu, Malaysia.<sup>2</sup>Assistant Professor Nursing Department, Universiti Sultan Zainal Abidin, Terengganu Malaysia.<sup>3</sup>Assistant Professor, Faculty of Business, Philadelphia University, Jordan.<sup>4</sup>Professor Faculty of Medicine, Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia.**\*Corresponding Author: Akram Ahmad Al. Omoush**

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**ABSTRACT**

**Introduction:** Emergency nurses play an essential role in the care of critically ill and injured patients, and their competency to perform clinical skills is vital to safe and effective patient care. This study aimed to assess the clinical competence and related demographic factors among emergency nurses (ED) in five public hospitals in the middle district of Jordan. **Methods:** In this cross-sectional study, 105 Jordanian nurses were selected by convenience sampling method. The data collection tools included demographic information of the participants and the Six Dimension Scale of Nursing Performance (6-DSNP). Data were analyzed using descriptive analysis, independent sample t-test, and multiple regression analysis. Instrument reliability was estimated using Cronbach Alpha analysis. **Results:** The findings of this study indicated that the mean score of overall nurses' clinical competencies was 7.4 out of 10, which indicated that the participants' nurses have a high level of nursing competencies. The findings revealed a statistically significant difference ( $p < 0.05$ ) between male and female nurses in EDs regarding professional development and critical care dimensions. However, no statistically significant differences in leadership, teaching/ collaboration, planning & evaluation, and interpersonal relationship & communications were discovered ( $p > 0.05$ ). Multiple linear regression analysis showed that socio-demographic factors (gender, age, and work experience) do not significantly influence nurses' clinical competence. Only the educational level significantly and positively influences nurses' clinical competence. **Conclusions:** The clinical competence of emergency nurses in public hospitals in Jordan was at a high level, clinical competence should be evaluated objectively, and positive measures should be taken to promote the application of their clinical competence.

**KEYWORDS:** Jordan, Competence, Emergency Department, Nursing, Public Hospital.**INTRODUCTION**

Nurses have pivotal roles in ensuring safe and high quality patient care. They must be competent not only in technical skills, but also in such areas as decision making, prioritization, and collaboration.<sup>[1,2]</sup> Nurses employed in emergency departments (EDs) provide unique patient care in diverse and rapidly changing situations. It is essential to identify the clinical competencies required of emergency nurses in order to ensure safe and effective patient care in this specialized setting.<sup>[3,4]</sup>

Nurses require different clinical competencies, based upon their employment settings.<sup>[5]</sup> The competencies required of emergency nurses are unique, owing to the

nature of the ED environment. In the ED, nurses are faced with rapidly changing and unexpected situations, patients with critical conditions, and time constraints.<sup>[6]</sup> These characteristics require ED nurses to have diverse and expanded clinical skill competencies.

**BACKGROUND**

Jordan is a country with a middle-income level and limited natural resources. Three major sectors comprise Jordan's health industry: public, private, international, and charitable. The Ministry of Health, Royal Medical Services, university hospitals, and the National Centre for Diabetes Endocrinology and Genetics are all part of the public sector. Private hospitals, clinics, and therapeutic and diagnostic facilities comprise the private

sector. The non-profit, international, and charitable sectors include hospitals run by NGOs, the King Hussein Cancer Centre, and institutions run by the United Nations. Jordan's population receives healthcare from the less-expensive public sector, about 75% of the population, while 21% relies on the private sector.<sup>[7]</sup> Every kid under the age of six and every adult who is 60 years of age or older is automatically eligible for public healthcare.<sup>[8]</sup>

In Jordan, all registered nurses (RNs) have completed a four-year bachelor program and have been found to demonstrate good management, professionalism, problem-solving, nursing procedure, and knowledge of fundamental competencies.<sup>[9]</sup> To use the title of RN and work in Jordanian hospitals. All nurses must hold a license from the MOH and be registered with the Jordan Nurses and Midwives Council. The Jordan Nurses and Midwives Council also provides training courses for RNs for free or for low prices and helps nurses find job opportunities in Jordan and other countries.

Several studies have assessed the level of clinical competencies of emergency nursing.<sup>[10]</sup> investigated the self-assessed clinical competence of new nurses working in the EDs of 115 nurses in nine educational hospitals in Iran. A convenience sampling method was used to select the study's participants. The Competency Inventory for Registered Nurse (CIRN) questionnaire with a 5-point Likert scale was used to evaluate the nurses' clinical competence. The result indicated that the mean clinical competency for the total scale was 155.7 (SD 32.9), indicating moderate competency. The most highly self-rated competency was legal/ ethical practice, and the least rated was critical thinking–research aptitude. Furthermore,<sup>[11]</sup> assessed the level of competencies of 87 nurses working in the emergency units at King Khaled and King Salman Specialist Hospital in Saudi Arabia. A convenience sampling method was used to select the study's participants. A clinical competency questionnaire with a 2-point Likert scale was used to evaluate the nurses' clinical competency. The results revealed that most emergency nurses have high clinical competency scores.<sup>[12]</sup> assessed the level of competencies of 319 nurses working in the emergency units in 30 hospitals in northwest Iran. A convenience sampling method was used to select the study's participants. A clinical nursing competency questionnaire with a 4-point Likert scale was used to evaluate the nurses' clinical nursing competency. The results revealed that the overall competency of the emergency nurses was  $73.31 \pm 14.2$ , indicating a good level of perceived competence. Moreover,<sup>[13]</sup> assessed the self-perceived educational needs of emergency nurses for 128 nurses working in the emergency units of four hospitals in Durban, South Africa. A convenience sampling method was used to select the study's participants. A structured, self-administered questionnaire developed by Rominski.<sup>[14]</sup> and a 3-point Likert scale was used to evaluate the nurses' nursing competency. The findings of this study

reflect a deficit in perceived competency levels, skills, and knowledge among the majority of emergency nurses. There is clearly a need for educational development to improve emergency nurses' basic, intermediate, and advanced skills.

This study aimed to examine the competences levels of ED nurses, ascertain if there are any significant statistical differences in nursing competency between the male and female in public hospitals ED, and test the association between socio-demographic factors and nursing competence level with socio-demographic characteristics, including age, years of nursing experience in ED, total years of nursing experience, education level, gender in Jordanian public hospitals in the middle region of Jordan.

## METHODS

### Study design

This cross-sectional study was conducted between July and August 2021 among nurses working in public hospitals affiliated with the middle region of Jordan.

### Sample and sampling method

The study participants included all nursing staff working in the public EDs. Convenience sampling was used to gather the data from 5 public hospitals affiliated with the middle region of Jordan during the data collection period. In total, 167 surveys were shared with the nurses, and 105 questionnaires were filled out and sent back to the researcher, with a response rate of 63%.

### Measurement instrument

Tools of the study a self-assessment questionnaire was used for the purpose of data collection. The questionnaire is comprising two main parts as follow:

**Part I: Nurses Socio-demographic characteristics:** Sociodemographic data elicited from nurses included age, gender, job title, education level, total years of experience, years of experience in the current unit.

**Part II: The six Dimension Scale of Nursing Performance (6-DSNP)** it developed by Schwirian,<sup>[15]</sup> to assesses the nurse's effectiveness in carrying out his/her roles and responsibilities in relation to patient care. The area examined include: leadership (four items), teaching/ collaboration (five items), planning/evaluation (five items), interpersonal relations/communication (five items) and professional development (five items) and critical care (five items). The critical care assessment items 1, 2,3,4,5 adapted from scale was developed from instrument to assess postgraduate ICU abilities.<sup>[16]</sup> and items 6,7,8 from instrument of.<sup>[17]</sup> A self-administration questionnaire attached with a cover letter and consent form was used for data collection. Respondents expressed their opinions on a 10-point Likert scale (1 = strongly disagree, 10 = strongly agree). The reliability of the 6-DSNP in this study was estimated using

Cronbach's alpha. Cronbach's alpha for scale dimensions ranged from 0.95-0.97, indicating high reliability.

### Ethical Considerations

Ethical approvals were obtained from Jordanian Ministry of Health research ethics committee on 6 June 2020. All questionnaires included a cover letter explaining the purpose of the study and a consent form for respondents to sign. The participants' confidentiality was ensured by do not ask the participants for personal information.

### Data Analysis

The data were entered into a Microsoft Excel file and then exported to IBM SPSS Version 25. Less than 5% of the values were missing, and the mean values were used in their place.<sup>[18]</sup> The cleaned and edited data were ready for appropriate statistical analysis, including; means,

standard deviations (SD), reliability analysis (Cronbach Alpha) and independent sample t-test. Moreover, a multiple linear regression was used to test associations between nurses' competence and socio-demographic characteristics.

### RESULTS

The demographic analysis for the study's respondents revealed that the male respondents were 52(49.5%) and the female were 53 (50.5 %). The mean age of respondents was 34.9 years (SD 7.13 years), the mean of total years of nursing experience was 11.6 years (SD 7.97 years), and the mean of work experience in ED was 9.03 years (SD 5.77 years). More information about the demographic profile is available in Table 1.

**Table 1: Table 1. Participant demographics (n=105)\*.**

Demographic characteristics	Mean	Std. Deviation	
Age	34.97	7.13	
Total Years of Nursing Experience	11.69	7.97	
Work Experience in ED (years)	9.03	5.77	
Group		Number	(%)
Gender	Male	52	49.5
	Female	53	50.5
Education Level	Bachelor's degree	90	85.7
	Master's degree	11	10.5
	PhD degree	4	3.8
Hospital Name	AL-Hussein Hospital	22	21.0
	Al-Basheer Hospital	32	30.5
	Al-Zarqa New Hospital	24	22.9
	Dr.Jamil Totanji Hospital	15	14.3
	Prince Faisal Hospital	12	11.4

Descriptive statistics such as means and SD were estimated for dimensions and items of the nursing competence scale, as shown in Table 2. The nursing competence was graded as: 1-2.8 = very low nursing competence, 2.81-4.6 = low, nursing competence, 4.61-6.4= medium, nursing competence, 6.41-8.2 = high, nursing competence and 8.21-10 = very high, nursing competence.

The lowest mean score was for the planning & evaluation dimension, 7.26 (SD 2.08). The highest mean score was for the critical care dimension, 7.60 (SD 1.90). In total, the nursing scored high for their competence in the public EDs.

**Table 2: Descriptive Analysis Results for the Nursing Competence Scale Dimensions and Items.**

Dimensions & Items	Min	Max	Mean	(S.D)
Leadership	2.00	10.00	7.40	1.76
Planning/ Evaluation	1.40	10.00	7.26	2.08
Interpersonal relationship/Communications	1.00	10.00	7.31	1.91
Professional Development	1.00	10.00	7.53	1.94
Critical care	1.33	10.00	7.60	1.90
<b>Overall nursing competency</b>	<b>1.49</b>	<b>10.00</b>	<b>7.40</b>	<b>1.74</b>

The mean difference in nursing competence between males and females in EDs was determined using an independent sample t-test. The findings revealed a statistically significant difference ( $p < 0.05$ ) between male and female nurses in EDs in terms of professional

development and critical care dimensions. However, no statistically significant differences in leadership, teaching/ collaboration, planning/ evaluation, and interpersonal relationship/communications were

discovered ( $p > 0.05$ ). Table 3 shows the results of the independent sample t-test.

Table 3 showed a significant difference in nursing competence between male and female nurses in public EDs regarding professional development ( $t_{103} = 2.58$ ,  $p < 0.05$ ). Male nurses reported a significantly greater positive competence level of professional development competence ( $M = 8.01$ ) than female nurses ( $M = 7.06$ ), the mean difference ( $M = 0.95$ ). The findings also showed a significant difference in nursing competence between

male and female nurses in public EDs regarding critical care ( $t_{103} = 2.47$ ,  $p < 0.05$ ). Male nurses reported significantly greater competence levels in critical care with ( $M = 8.05$ ) than female nurses ( $M = 7.15$ ), the mean difference ( $M = 0.90$ ). Moreover, the results indicated no significant difference in nursing competence between the male and female nurses in public EDs regarding their leadership, teaching/ collaboration, planning/ evaluation, and interpersonal relationship/communications, ( $t_{103} = 0.80$ ,  $p > 0.05$ ), ( $t_{103} = 0.66$ ,  $p > 0.05$ ), ( $t_{103} = 0.97$ ,  $p > 0.05$ ), ( $t_{103} = 0.189$ ,  $p > 0.05$ ), respectively.

**Table 3: The Results of the Independent Sample T-Test.**

Dimensions	Male Mean	Female Mean	Difference Mean	t-value	df	Sig. (2-tailed)
Leadership	7.54	7.26	0.27	0.80	103	0.42
Teaching/ Collaboration	7.43	7.19	0.24	0.66	103	0.51
Planning/ Evaluation	7.46	7.06	0.39	0.97	103	0.33
Interpersonal Relationship/Communications	7.66	6.96	0.69	1.89	103	0.06
Professional Development	8.01	7.06	0.95	2.58	103	0.01
Critical care	8.05	7.15	0.90	2.47	103	0.01

Table 4 shows a summary of multiple regression analysis results. The analysis revealed that all predictor variables (age, years of nursing experience in ED, total years of nursing experience, gender) except the education level could significantly predict the nursing competence in ED. All p-values of the selected predictors are above

0.05, except the p-value of the predictor for education level, which is  $< 0.001$ , meaning that having a high education level in nursing (Master's or Ph.D.) is a predictor of a high level of nursing competence ( $\beta = 0.39$ ,  $p = < 0.001$ , 95% (CI: 0.89-3.01).

**Table 4: Results of Multiple Linear Regression for the Association between Nursing Competency Score and Socio-Demographic factors.**

Predictors	Standardized Coefficient Beta	p-value	95% Confidence Interval	
			Lower Bound	Upper Bound
Age	0.23	0.26	-0.04	0.15
Total Years of Nursing Experience	-0.39	0.11	-0.19	0.02
Work Experience in ED (years)	0.17	0.24	-0.03	0.14
Gender				
Female	Reference			
Male	0.13	0.16	-0.19	1.12
Education level				
Bachelor	Reference			
Higher education	0.39	<b>&lt; 0.001</b>	0.89	3.01

Note: Statistically significant p values at  $p < 0.05$  are in Bold.

## DISCUSSION

The present study aimed to assess the level of clinical nursing competencies among Jordanian nurses working in ED, related factors, and whether there is a difference between male and female clinical competencies. No prior study has been conducted in Jordan to investigate nurses' clinical competence in the EDs. The results showed that the emergency nurses had a high clinical competency score in ED. Also, the study found a significant difference in nurses' mean score of clinical competence based on gender. also in multiple regression analysis results show the education level could significantly predict the nursing competence in ED.

Our result showed that the emergency nurses had a high clinical competency score in ED. The results of this study are congruent with the study of.<sup>[11]</sup> Also, the results align with a study done on Iranian nurses.<sup>[19]</sup> However, our results are not in line with the findings of the studies by.<sup>[13]</sup> This can be argued that this high score could be related to many factors, such as holding regular educational courses and periodic evaluations of nurses' clinical competence.<sup>[20,21]</sup> Therefore, by organizing workshops and educational courses, it is possible to provide a favorable ground for the promotion of nurses' clinical competence.

The present study found that education level is a statistically significant predictor of emergency nurses' competency scores. This result is consistent with.<sup>[19]</sup> However, also these results are consistent with.<sup>[22]</sup> It can be expected that, with the increase in the educational level of nurses, their clinical competence will also increase.

Our study also found a significant difference in nurses' mean score of clinical competence based on gender. Male nurses reported a significantly greater positive competence level, which was consistent with.<sup>[23,24]</sup> which found that male nurses exhibited higher self-reported competency evaluation than female nurses. However, this result is inconsistent.<sup>[25,26,19]</sup> which indicated no statistically significant difference between the mean scores of groups based on gender. A possible explanation for this may be due to differences in measurement scale or work environment.

## CONCLUSION

The results of our study indicated that the clinical competence of Jordanian nurses was at a very good level, as indicated by the results. No significant prediction was found for nurses' clinical competence and the socio-demographic variables (gender, age, and work experience). Except for educational level. Also, theirs a statistically significant difference between male and female nurses regarding clinical competence. Policymakers, nurse educators, and health care providers can use awareness about the level of clinical competency of nursing staff to implement interventional measures if necessary to promote the nurses' clinical competencies. Considering the importance of clinical competence for nursing staff, hospital nursing managers must consider the factors influencing nurses' clinical competencies, such as social/psychological and organizational factors. By using new educational approaches such as e-learning and continuous training, we can increase nurses' clinical competence. Furthermore, continuous assessment of nurses' clinical competence using standard tools can be highly beneficial. Further studies are recommended to investigate the factors influencing the clinical competencies of nurses. Increasing the quality of nurses' performance in the healthcare system requires regular and continuous planning to increase their clinical competence.

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