



NURSING INTERNS' PERCEPTION OF COMPETENCE, CRITICAL THINKING AND RESEARCH UTILIZATION

Saeed Rabie Mostafa¹, Lamiaa Ismail Keshk², Mervat E. A. El Dahshan³, Noha Hussein Yassien⁴

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Abstract:

Background: Nursing competency encompasses the core abilities required to fulfill one's role as a nurse. Therefore, it is crucial to clearly define nursing competency in order to establish a foundation for nursing education curriculum.

Aim: The aim of this study was to assess the perception of nursing interns regarding competencies, critical thinking, and research utilization.

Method: A descriptive correlational research design was employed for this study. The research was conducted at two different hospitals from different sectors: Badr University Hospital, and As-Salam International Private Hospital. All nursing interns available during the study period who agreed to participate in the study were included. Three instruments were used to collect data: the Nurse Competence Scale, California Critical Thinking Dispositions Inventory, Research Utilization Questionnaire, and socio-demographic characteristics.

Results: The findings of the present study revealed that approximately two-thirds (65.5%) of the nursing interns studied exhibited a competent level of nursing competence. Furthermore, less than two-thirds (63.6%) demonstrated a positive inclination towards critical thinking disposition, while more than two-thirds (71.8%) exhibited a good level of research utilization.

Conclusion: Majority of the studied nursing interns had a competent level of nursing competency and positive inclination regarding critical thinking disposition and a good level of research utilization. In addition, there was a highly statistically positive correlation among a total score of nursing competency, necessary thinking disposition, and research utilization among the studied nursing interns.

Recommendations: Providing sufficient training for problem based learning for academic staff nursing members, their assistant and students in faculty of nursing.

1 B.S.C in Nursing Sciences, Faculty of Nursing - Helwan University

2 Professor of Nursing Administration -Faculty of Nursing - Helwan University

3 Professor of Nursing Administration, Faculty of Nursing - Menoufia University

4 Lecturer of Nursing Administration Faculty of Nursing-Helwan University

Introduction:

In the present clinical nursing setting, there is a growing level of intricacy that requires nurses to possess advanced cognitive abilities. The ability to engage in critical and creative thinking, as well as make sound clinical decisions, has become indispensable for healthcare practitioners. In recent times, the nursing process model has been closely linked to the development of clinical judgments in nursing, as it is perceived as an effective problem-solving methodology. Nursing education has placed significant emphasis on integrating theory and clinical judgment to improve overall performance [1].

Internships offer students a targeted educational opportunity within a particular academic discipline. They provide a valuable platform for applying knowledge, honing skills, and becoming familiar with professional norms. Through internships, students move from being supervised and reliant on others to engaging in independent and collaborative

practice. This transition allows them to gain hands-on experience working with actual patients and internalize professional values and principles [2]. Recently licensed nurses are required to proficiently navigate complex healthcare settings, delivering care that is centered around the needs of patients. They encounter a range of expectations and pressures from healthcare authorities, diverse healthcare professionals, nurse leaders, coworkers, and their own personal aspirations. Internships serve as a critical component in enabling students to apply theoretical knowledge gained in classrooms to practical scenarios, facilitating their professional growth and achievement. Internship programs usually have defined learning objectives and academic assignments that must be fulfilled [3, 4]. Nurse competence entails the capability to achieve favorable outcomes in diverse real-life situations. Nursing practice demands the utilization of intricate combinations of knowledge, skills, values, and attitudes. Competence is cultivated through hands-

on experience and evolves along a spectrum that spans from being a beginner to becoming an expert. As nurses gain practical experience and expand their proficiency, they advance along this continuum, continually refining their abilities and enhancing their capacity to deliver high-quality care [5]. Technical competencies in the healthcare field pertain to the abilities and aptitudes of healthcare professionals to autonomously carry out their duties and responsibilities in a proficient and secure manner, utilizing relevant knowledge, skills, and discernment. These competencies encompass the particular knowledge and skills necessary for achieving successful job performance in specialized areas such as intensive care units. Conversely, behavioral competencies relate to the capability of healthcare workers to engage and collaborate with others in specific practice situations within their given context [6].

Evaluating and intervening in competency is strongly recommended as a strategy to ensure a skilled and motivated workforce, as well as to maintain high-quality healthcare services. Existing literature underscores the significance of conducting systematic assessments of nurses' competence and examining related factors in order to improve the overall quality of nursing care [7]. The competence of nursing interns has been shown to have a positive influence on the quality of patient care, as well as the satisfaction of both patients and nurses. However, studies have indicated that nursing students generally exhibit moderate levels of competence. The internship year plays a crucial role in enabling nurses to enhance their overall knowledge, competency, experience, relations, clinical judgment, critical thinking, and practical skills within a real-life clinical environment. This period offers invaluable opportunities for professional growth and development [8].

Nursing is a distinct profession characterized by the use of standardized knowledge. It encompasses three components: foundational knowledge, practical problem-solving skills, and knowledge based on skills and attitudes to serve clients. Nursing exhibits strong commitment, long-term education, specialized knowledge, skills, ethics, and values. It operates autonomously and is supported by professional associations [9].

Critical thinking (CT) is extensively utilized in healthcare practice and educational settings. It entails purposeful and goal-oriented thinking with the objective of making evidence-based judgments rather than relying on assumptions. Critical thinking encompasses a range of skills, including problem definition, assessment of information credibility, accurate inference-making, and reasonable value judgments. It can be classified into five types with twelve aspects, which include elementary clarification, basic support, inference, advanced clarification, strategies, and tactics [10, 11].

Research utilization refers to the process of applying research findings to real-world practice. This term was commonly used before the concept of evidence-based practice emerged. The objectives of research utilization and evidence-based practice converge in their shared goal of enhancing patient care and advancing the field of nursing. Evidence-based practice improves nursing by integrating the most relevant and reliable evidence from research studies [12]. Research utilization aims to apply research findings in clinical practice, leading to improvements in patient conditions, the creation of clinical practice guidelines and protocols, and the dissemination of research findings. It holds value for researchers, healthcare agencies, and the nursing profession by facilitating evidence-based decision-making and enhancing patient care [13].

When nursing interns encounter patients' problems and critical situations, they frequently assume a submissive role, following physicians' instructions. However, this approach may lead to inadequate patient care and pose emotional and psychological challenges in the workplace. In recent times, there has been a growing emphasis on competence, critical thinking, and research utilization across various healthcare professions. Addressing the divide between evidence-based nursing practice and the interns' lack of confidence in critically evaluating clinical evidence is a pivotal matter. The objective is to empower nursing interns by fostering their critical thinking abilities and improving their capacity to assess clinical evidence more effectively [13, 14]. Therefore, this study aimed to assess nursing interns' perception of competencies, critical thinking, and research utilization.

Subjects and Method:

Study design:

A descriptive correlational research study was carried out in two distinct hospitals

Study Settings:

Research study was carried out in two distinct hospitals .representing different sectors: Badr University Hospital, affiliated with the university sector, and As-Salam International Private Hospital, affiliated with the private sector.

Study population:

All nursing interns (110 nursing interns) who are available during the data collection period and accepted to participate were included in the study. It is distributed as the following: Badr University hospital (85 nursing interns) and As-Salam International Private Hospital (25 nursing interns).

Data collection instruments:

Instrument I: Demographic characteristics of studied nursing interns as age, sex, residence, marital status, training hospital were collected too.

Instrument II: The Nurse Competence Scale:

It was developed by **Meretoja et al. [15]**. It contained of 73 elements structured in seven competence categories with six to 19 items in each domain: Helping role (7 elements), teaching-coaching (16 elements), diagnostic functions (7 elements), managing situations (8 elements), therapeutic interventions (10 elements), ensuring quality (6 elements), and finally work role (19 elements).

Scoring system:

Participants in the study were additionally requested to rate the frequency of their utilization of competence in their clinical practice using a 4-point scale: 0 = not applicable in my work, 1 = used very seldom, 2 = used occasionally, 3 = used very often. The total scores obtained were converted into percentage scores. A score below 75% was indicative of poor competence, while a score equal to or higher than 75% indicated good competency.

Instrument: III: California Critical Thinking Dispositions Inventory (CCTDI):

The instrument utilized in this study was developed by **Facione et al. [16]** and is known as the Critical Thinking Disposition Inventory (CCTDI). It was designed based on a multidisciplinary Delphi report and assesses seven critical thinking dispositions. The CCTDI comprises 75 declarative statements that reflect seven subscales, namely: 1) truth-seeking, 2) open-mindedness, 3) analyticity, 4) systematicity, 5) self-confidence, 6) inquisitiveness, and 7) maturity.

Scoring system:

The instrument implemented in this study utilizes a six-point Likert scale, ranging from 1 (strongly agree) to 6 (strongly disagree). The total scores obtained were converted into percentage scores. A score below 50% indicated a positive inclination toward critical thinking, a score between 50% and 75% indicated ambivalence toward critical thinking, and a score equal to or higher than 75% indicated disinclination toward critical thinking.

Instrument IV: Research Utilization Questionnaire:

The Research Utilization Questionnaire (RUQ) was initially developed by **Champion & Leach [17]** and subsequently revised by **Humphris et al. [18]**. In this study, three indexes from the RUQ were utilized. These indexes include: 1) Attitude towards research (12 items), 2) Availability and support for implementing research findings (8 items), and 3) Research use in daily practice (9 items), making a total of 29 items. The instrument encompasses both positive and negative statements to assess the various aspects of research utilization.

Scoring system:

The items in the questionnaire employ a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total scores obtained were converted into percentage scores. Scores equal to or higher than 50% indicated a positive attitude, good availability, and support for implementing research findings in clinical practice, as well as a high degree of utilizing research findings in daily practice. On the other hand, scores below 50% indicated a poor attitude, limited availability, and low support for implementing research findings in clinical practice, along with a low degree of utilizing research findings in daily practice.

Validity and reliability:

The study instruments underwent a thorough evaluation to establish their face and content validity. A panel of five nursing experts, specializing in nursing administration and education from different faculties of nursing, conducted the assessment. The panel meticulously reviewed the instruments to ensure their comprehensiveness, accuracy, and clarity of language. Based on the expert recommendations provided by the panel, specific modifications were made to optimize the instruments' applicability and effectiveness in Arabic languages.

To assess the internal consistency of the study instruments, Cronbach's Alpha was employed. The results indicated a satisfactory level of internal consistency for each instrument. The Nurse Competence Scale demonstrated a Cronbach's Alpha coefficient of 0.783, indicating a reliable measure of nurse competence. The California Critical Thinking Dispositions Inventory (CCTDI) achieved a Cronbach's Alpha coefficient of 0.831, indicating a high level of internal consistency in assessing critical thinking dispositions. Lastly, the Research Utilization Questionnaire exhibited a Cronbach's Alpha coefficient of 0.792, indicating good internal consistency when measuring research utilization.

Ethical Consideration:

Before commencing the study, ethical clearance was acquired from the Scientific Research Ethical Committee at the Faculty of Nursing, Helwan University. The researcher engaged in discussions with the directors of the chosen hospitals to explain the study's aims and secure their consent for participation. The directors were provided with reassurances regarding the anonymity and confidentiality of the gathered data, which was exclusively intended for scientific research purposes. Additionally, the participants were informed of their right to withdraw from the study at any point.

Field work:

Given the prevailing conditions and the challenges posed by the Covid-19 pandemic, face-to-face interviews were not feasible. Therefore, online interviews were conducted with nursing interns as a suitable alternative. Data collection for the study took place from the beginning of February 2020 until the end of April 2020. The total sample size comprised nursing interns from Badr University Hospital and As-Salam International Private Hospital for the 2019-2020 academic year, who voluntarily agreed to participate in the study during the data collection period. The sample consisted of 110 nursing interns.

Pilot study:

Pilot study was carried out on 10% (11 nursing interns) of the total study sample (110 nursing interns) to assess the applicability, efficiency, clarity of tools, assessment of feasibility of field work, beside to detect any possible obstacles that might face the investigator and interfere with data collection. Necessary modifications were done based on the pilot study results, to strengthen their contents or for more simplicity and clarity. The pilot sample was excluded from the main study sample.

After providing oral explanations about the study, each student included in the research was individually administered a questionnaire. Students were given the opportunity to seek further clarification from the researchers if they encountered any difficulties in understanding the

Results

Table (1): it presents that the total mean of nursing competence score among the studied nursing intern is $\bar{x} \pm SD = 148.96 \pm 35.32$ with a significant statistical difference at $P = 0.04$.

Figure (1): represents level of nursing competence among the studied nursing interns. It clarifies that less than two-thirds (65.5%) of the studied nursing interns had competent level of nursing performance.

Table (2): it displays that the total mean of critical thinking disposition score among the studied nursing intern is $\bar{x} \pm SD = 279.80 \pm 57.52$ with a significant statistical difference at $P = 0.000$.

Figure (2): it represents level of critical thinking disposition among the studied nursing interns. It clarifies that less than two-thirds (63.6%) of the studied nursing interns had positive inclination level regarding to critical thinking disposition. In addition to, presence of difference between observed and expected values with a significant statistical difference at $P = 0.001$.

Table (3): it demonstrates that the total mean of research utilization score among the studied nursing intern is $\bar{x} \pm SD = 105.70 \pm 23.68$ with a significant statistical difference at $P = 0.000$.

Figure (3): it illustrates level of research utilization among the studied nursing interns. It clarifies that more than two-thirds (71.8%) of the studied nursing

questionnaire items. Subsequently, the questionnaire sheets were distributed to all students, and they were instructed to complete them in the presence of the investigator. This approach ensured that all questions were answered fully by the students.

Statistical Analysis:

The collected data underwent a coding process and were then entered into the Statistical Package for the Social Sciences (SPSS) version 23.0 for analysis. Suitable analyses were performed based on the type of data obtained for each parameter. Descriptive statistics were used to present the data. For categorical variables, frequencies and percentages were calculated to provide an overview of the distribution. Continuous quantitative variables were summarized using means and standard deviations. To examine the relations between qualitative categorical variables, the Chi-square (χ^2) test was employed. However, if the expected count was less than 5 in more than 20% of the cells, Fisher's Exact Test was utilized as an alternative.

Correlation analyses were conducted to assess the relations between quantitative and qualitative variables. Both Pearson's correlation coefficient and Spearman's correlation coefficient were employed based on the nature of the variables being examined. Statistical significance was determined by a p-value less than 0.05, indicating that the observed results were unlikely to occur due to random chance.

interns had good level of research utilization. In addition to, presence of difference between observed and expected values with a significant statistical difference at $P = 0.001$. Moreover, good to poor level of research utilization ratio = 2.5:1.

Figure (4): which illustrates percentage distribution of total levels of nursing competency, critical thinking disposition and research utilization among the studied nursing interns. It shows that less than two-thirds of the studied nursing interns had competent level of nursing competency, and positive inclination regarding critical thinking disposition. Moreover, more than two thirds good level of research utilization among the studied nursing interns. with the percentage of 65.5%, 63.6% & 71.8%.

Table (4): shows that, there was a significant statistical relation between demographic characteristics (age, sex, marital status & training hospital) and total level of nursing competence among the studied nurses, at $P = \leq 0.05$.

Table (5): As regard to demographic characteristic of the studied nursing intern. It illustrates that 38.2% of the age of the studied nursing intern was more than ≥ 23 years old with a mean age of 23.11 ± 0.805 . Moreover, more than two-thirds of the studied nursing intern were female, from urban, single, and trained in Badr hospital with the percentage of

73.6%, 64.5%, 75.5% & 77.3% respectively. Also, there was a significant statistical relation between demographic characteristics (age, sex, marital status & training hospital) and total level of nursing competence among the studied nurses, at $P = \leq 0.01$. Table (6): displays that, there was a significant statistical relation between demographic characteristics (age, sex & training hospital) and total level of critical thinking disposition among the studied nurses, at $P = \leq 0.01$.

Table (7): illustrated correlation matrix between cumulative total score of nursing competency, critical thinking disposition and research utilization among the studied nursing interns. It clarifies that, there was highly statistically positive correlation between total score of nursing competency, critical thinking disposition and research utilization among the studied nursing interns at ($P= 0.000$).

Table (1): Frequency Distribution of Total and Sub-Total Mean of Nursing Competence Score among Studied Nursing Interns (n= 110).

Variable		N	%	Min	Max	\bar{x}	SD	T-test	P-value
Helping role	Competent	74	67.3	14	21	17.18	1.52	4.71	0.000**
	In- competent	36	32.7	3	13	9.86	2.68		
	Total	110	100.0	3	21	14.78	3.97		
Teaching and coaching	Competent	70	63.6	33	45	37.20	3.20	2.03	0.04*
	In- competent	40	36.4	10	31	24.18	5.55		
	Total	110	100.0	10	45	32.46	7.56		
Diagnostic function	Competent	58	52.7	14	20	16.83	1.54	5.95	0.000**
	In- competent	52	47.3	3	13	10.83	2.06		
	Total	110	100.0	3	20	13.99	3.50		
Managing situation	Competent	70	63.6	16	24	19.30	1.90	4.17	0.000**
	In- competent	40	36.4	5	15	11.95	2.68		
	Total	110	100.0	5	24	16.6	4.18		
Therapeutic intervention	Competent	66	60.0	20	30	24.48	2.0	3.42	0.001**
	In- competent	44	40.0	6	19	13.32	3.81		
	Total	110	100.0	6	30	20.02	6.19		
Ensuring quality	Competent	76	69.1	12	18	14.37	1.36	3.63	0.000**
	In- competent	34	30.9	3	11	7.47	1.98		
	Total	110	100.0	3	18	12.24	3.56		
Work role	Competent	73	66.4	39	54	46.07	3.41	2.38	0.011**
	In- competent	37	33.6	9	36	24.59	8.0		
	Total	110	100.0	9	54	38.85	11.52		
Cumulative total	Competent	72	65.5	145	202	171.71	13.16	2.15	0.04*
	In- competent	38	34.5	44	139	105.87	20.72		
	Total	110	100.0	44	202	148.96	35.32		

*Significant $p \leq 0.05$

**Highly significant $p \leq 0.01$

Figure (1): Percentage Distribution of Level of Nursing Competence among Studied Nursing Interns (n= 110).

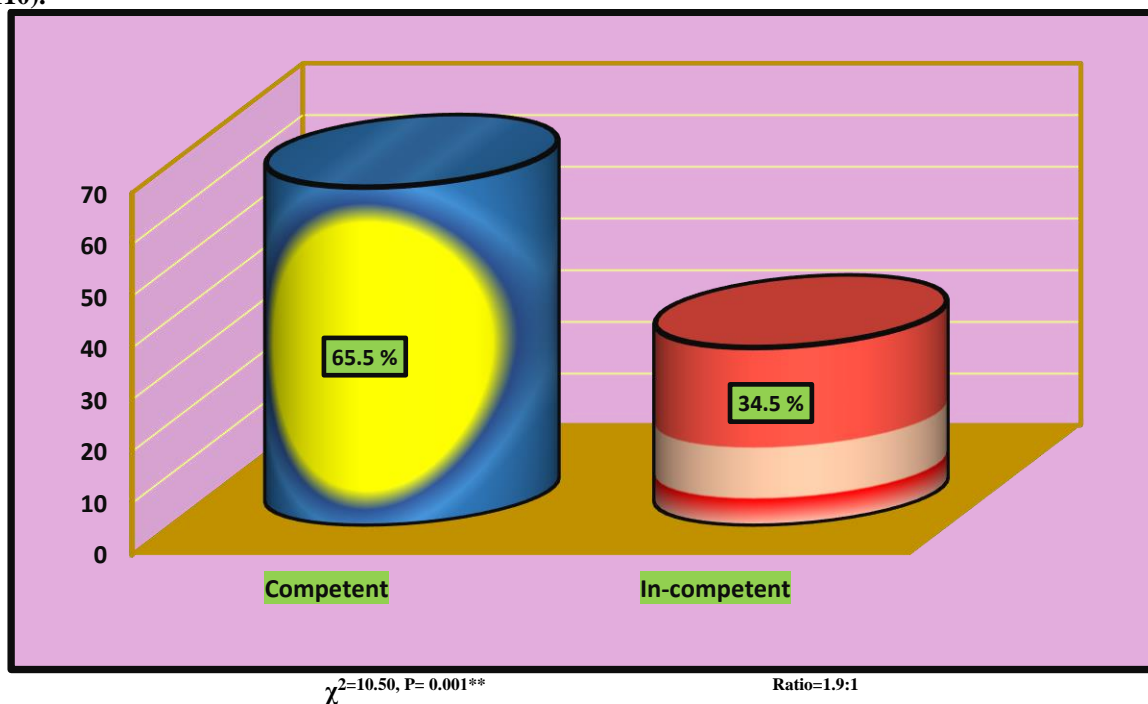


Table (2): Total and Sub-Total Mean Scores of the Critical Thinking Disposition among Studied Nursing Interns (n= 110).

Critical thinking	Min	Mix	\bar{x}	SD	T-test	P-value
Truth-seeking	19	56	45.58	9.472	17.25	0.000**
Open-mindedness	20	56	45.40	9.402	17.18	0.000**
Analyticity	16	51	40.86	9.01	14.96	0.000**
Systematicity	20	54	40.46	8.687	15.04	0.000**
Self-confidence	17	44	33.54	7.199	15.35	0.000**
Inquisitiveness	15	49	36.75	8.809	13.98	0.000**
Cognitive maturity	18	47	37.21	7.582	16.88	0.000**
Total	125	339	279.80	57.52	16.74	0.000**

*Significant $p \leq 0.05$

**Highly significant $p \leq 0.01$

Figure (2): Percentage Distribution of Total Level of Critical Thinking Disposition among Studied Nursing Interns (n= 110).

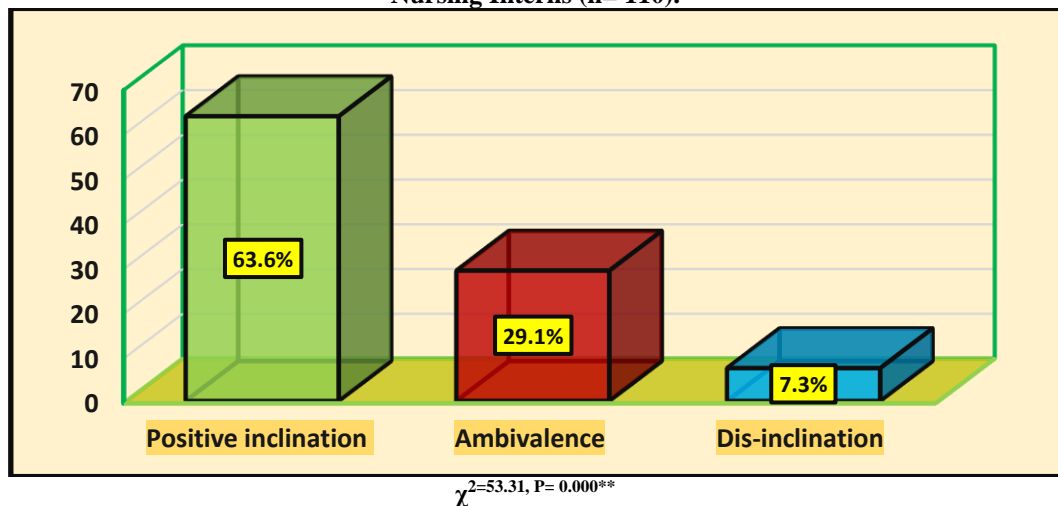


Table (3): Total and Sub-Total Mean Scores of the Research Utilization among Studied Nursing Interns (n= 110).

Research Utilization	Min	Mix	\bar{x}	SD	T-test	P-value
Attitude Towards Research	18	55	44.17	10.24	5.38	0.000**
Research Implementation	11	37	29.15	6.58	5.02	0.000**
Research Use in Daily Practice	15	42	32.37	7.52	3.31	0.001**
Total	44	133	105.70	23.68	4.73	0.000**

*Significant $p \leq 0.05$

**Highly significant $p \leq 0.01$

Figure (3): Percentage Distribution of Total Level of Research Utilization among Studied Nursing Interns (n= 110).

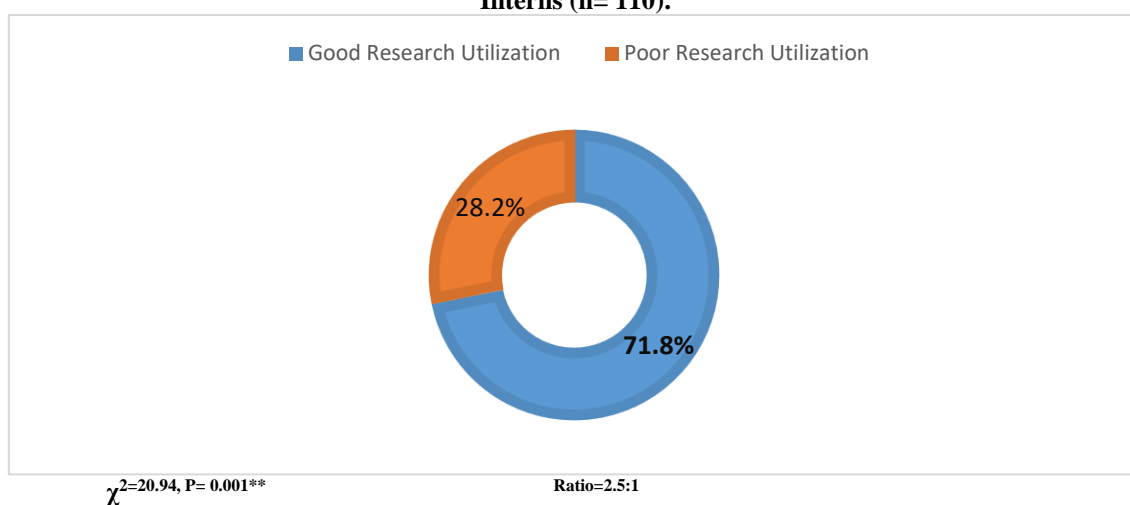


Figure (4): Percentage Distribution of Total Levels of Nursing Competency, Critical Thinking Disposition and Research Utilization among Studied Nursing Interns (n= 110).

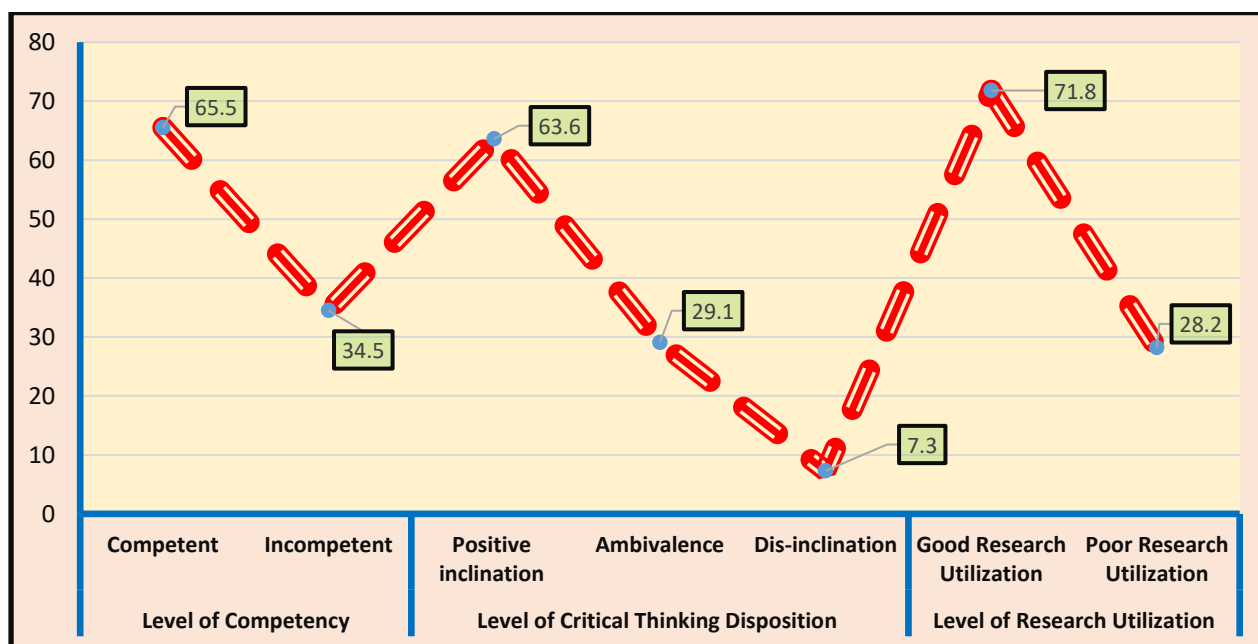


Table (4): Relation between Total Level of Nursing Competence and demographic characteristics among Studied Nursing Interns (n= 110).

Demographic characteristics		N.	Total Level of Competence				X ²	P-Value
			Competent		In-competent			
			72	65.5	38	34.5		
			N.	%	N.	%		
Age (Year)	▪ 21-<22	30	2	1.8	28	25.5	65.3	0.000**
	▪ 22-<23	38	30	27.3	8	7.3		
	▪ ≥ 23	42	40	36.4	2	1.8		
Gender	▪ Male	29	14	12.7	15	13.6	5.14	0.02*
	▪ Female	81	58	52.7	23	20.9		
Marital status	▪ Single	83	69	62.7	14	12.7	46.7	0.000**
	▪ Married	27	3	2.7	24	21.8		
Residence	▪ Urban	71	49	44.5	22	20.0	1.12	0.28
	▪ Rural	39	23	20.9	16	14.5		
Hospital	▪ <i>As-Salam International</i>	25	25	22.7	0	0.0	17.1	0.000**
	▪ Badr Hospital	85	47	42.7	38	34.5		

*Significant p ≤ 0.05

**Highly significant p ≤ 0.01

Table (5): Relation between Total of Level of Critical Thinking Disposition and demographic characteristics among Studied Nursing Interns (n= 110).

Demographic characteristics		N	Total Critical Thinking						X ²	P-Value
			Positive		Ambivalence		Dis-inclination			
			70	63.6	32	29.1	8	7.3		
			N	%	N	%	N	%		
Age (Year)	▪ 21-<22	30	2	1.8	22	20.0	6	5.5	64.8	0.000
	▪ 22-<23	38	28	25.5	10	9.1	0	0.0		
	▪ ≥ 23	42	40	36.4	0	0.0	2	1.8		
Gender	▪ Male	29	14	12.7	15	13.6	0	0.0	11.2	0.004**
	▪ Female	81	56	50.9	17	15.5	8	7.3		
Marital status	▪ Single	83	67	60.9	13	11.8	3	2.7	42.7	0.000**
	▪ Married	27	3	2.7	19	17.3	5	4.5		
Residence	▪ Urban	71	47	42.7	19	17.3	5	4.5	0.59	0.743
	▪ Rural	39	23	20.9	13	11.8	3	2.7		
Hospital	▪ <i>As-Salam International</i>	25	25	22.7	0	0.0	0	0.0	18.5	0.000**
	▪ Badr Hospital	85	45	40.9	32	29.1	8	7.3		

*Significant p ≤ 0.05

**Highly significant p ≤ 0.01

Table (6): Relation between Total Level of Research Utilization and demographic characteristics among Studied Nursing Interns (n= 110).

Demographic characteristics		N	Level of Research Utilization				X ²	P-Value
			Good		Poor			
			79	71.8	31	28.2		
			N.	%	N.	%		
Age (Year)	▪ 21-<22	30	2	1.8	28	25.5	86.5	0.000**
	▪ 22-<23	38	37	33.6	1	0.9		
	▪ ≥ 23	42	40	36.4	2	1.8		
Gender	▪ Male	29	15	13.6	14	12.7	7.8	0.005
	▪ Female	81	64	58.2	17	15.5		
Marital status	▪ Single	83	76	69.1	7	6.7	0.792	0.373
	▪ Married	27	3	2.7	24	21.8		
Residence	▪ Urban	71	53	48.2	18	16.4	0.792	0.37
	▪ Rural	39	26	23.6	13	11.8		
Hospital	▪ As-Salam International	25	25	22.7	0	0.0	12.7	0.000**
	▪ Badr Hospital	85	54	49.1	31	28.2		

*Significant $p \leq 0.05$

**Highly significant $p \leq 0.01$

Table (7): Correlation Matrix among Cumulative Total Score of Nursing Competency, Critical Thinking Deposition and Research Utilization among Studied Nursing Interns (N= 110).

Items		Total Competence score	Total Critical Thinking Score	Total Research Utilization
Total Competence score	R		0.949	0.976
	p-value		0.000**	0.000**
Total Critical Thinking Score	R	0.949		0.985
	p-value	0.000**		0.000**
Total Research Utilization	R	0.976	0.985	
	p-value	0.000**	0.000**	

r-Pearson Correlation Coefficient;

*Significant $p \leq 0.05$

**Highly significant $p \leq 0.01$

Discussion

Nurses are expected to possess a range of competencies encompassing theoretical and scientific knowledge, specific psychomotor and technical skills, effective communication, cultural competence, adherence to professional values, and ethical conduct. These competencies are essential for nurses to navigate the complexities of real-world clinical settings. The nursing profession demands a multifaceted combination of attributes, necessitating nursing interns to acquire highly specialized competencies. These competencies enable interns to accurately assess patients' conditions, anticipate potential issues, and effectively address them during the provision of nursing care [19].

This study aimed to assess nursing interns' perception of competencies, critical thinking, and research utilization. To fulfill the aim of this study, the following four stated research questions were answered: What are the nursing interns' perception of competencies? What are the nursing interns' perception of critical thinking? What are the nursing interns' perception of research utilization? What is the relation among nursing interns' perception of competencies, critical thinking, and research utilization.

Considering total level of nursing competence among the studied nursing interns. It clarifies that less than two-thirds of the studied nursing interns had competent level of nursing performance. In addition to, presence of difference between observed and expected values with a significant statistical difference.

From the researchers' point of view, that finding could be attributed to the fact that all items on the performance level are frequently practiced by the students during their clinical practice of previous academic years; thus, the majority of students in both private and public hospitals achieved an excellent level in that domain.

Furthermore, in Egypt, the rigorous accreditation and quality assurance programs of the health-care

system might account for that result in both health-care sectors. Creating a professional nursing practice work environment that allow nurses to practice to their full potential, and according to their expectation as professionals, may be a fruitful strategy for nursing managers and administrators to attract and retain nurses, promote their commitment to the organization and improve their outcomes.

In addition, this result could be as As-Salam International Private Hospital and Bader University hospital (under the umbrella of the faculty of nursing-Helwan University protocol) provide sufficient time to support internship students' work and provide them with guidance and chances to master clinical nursing competencies.

The findings of this study are in line with the results obtained in Jeddah, Saudi Arabia, as reported by **Alnajjar et al. [20]** who concluded that through internship programs, nursing interns have a higher likelihood of developing elevated levels of competence, confidence, and self-efficacy. The study finding was agreed with **Aboshaiqah & Qasim [21]** who confirmed that the nursing interns had competent level of performance in the clinical setting especially in dealing with acutely ill patients. The majority of the nursing interns perceived internship period as a constructive experience.

In contrast, the findings of this study differ from the results obtained by **Yang et al. [22]**, who concluded that due to the absence of standardized courses on ACP in China, nursing interns lack knowledge about ACP and are unable to apply it in their clinical practice.

Regarding the overall level of critical thinking disposition among the nursing interns in the study, it was found that more than two-thirds of them exhibited a positive inclination toward critical thinking. According to the researchers, this can be attributed to the influence of clinical practices in both As-Salam International Private Hospital and Bader University Hospital on the development of critical thinking skills among the interns. Furthermore, the nursing interns' positive feedback on the critical thinking process can be attributed to their exposure to it in the fourth degree of their nursing administration curriculum. It is also possible that the interns' preparation and practice during their undergraduate education played a role in their positive attitude toward critical thinking.

Furthermore, the findings of this study align with the results obtained by **Shirazi and Heidari [11]**, who revealed a positive correlation between age, academic course progression, and higher scores in critical thinking skills. These findings further support the notion that as nursing students advance in their education and gain more experience, their critical thinking abilities tend to improve.

In contrast, these findings contradicted the results obtained by **Jafari et al. [23]** in their study on the level of critical thinking among medical sciences

students in Iran. they concluded that the critical thinking skills of medical sciences students in Iran were at a low level, and their inclination towards critical thinking was reported to be at a moderate to low level. They emphasized the significance of critical thinking for medical sciences students and suggested that future studies should focus on identifying factors that can enhance the level of critical thinking among these students.

Considering total level of research utilization among the studied nursing interns, more than two-thirds of the studied nursing interns had good level of research utilization. From the researchers' point of view, the faculty of nursing at Helwan University has an on-going power to develop equipped and confident new graduate nurses who can commit to their health care organizations.

Furthermore, these findings are consistent with the results obtained by **Coyne et al. [24]**, who showed positive outcomes in three areas: improvements in practice, dissemination of knowledge, and increased student interest in research and further professional development.

Similarly, the findings aligned with the study conducted by **Zuriguél-Pérez et al. [25]**, concluded that the intellectual and cognitive dimension had a higher mean score compared to the technical dimension, indicating good levels of critical thinking skills in the sample. However, these findings are inconsistent with the results obtained by **Amoo and Gbadamosi [26]** Who concluded that students' participation in research-related activities was low. The researchers recommended that nursing and midwifery faculties implement measures such as research workshops, seminars, and conferences to enhance student engagement in research.

Considering correlation, there was a significant statistical relation between demographic characteristics (age, sex, marital status & training hospital) and total level of nursing competence among the studied nursing interns. From the researchers' point of view, these findings might be accounted for that female nursing students are more motivated to join the different clinical practice in the different hospital immediately after finishing the second academic year in the faculty, so they might enrich their clinical experiences and have early engaged in the clinical field which might contribute to raising their level of competence.

Furthermore, the study findings are consistent with the results reported by **El-Shrief and Ageiz [27]** indicated a statistically significant relation between the socio-demographic data of nursing intern students (such as sex, marital status, and working overtime) and their level of clinical competence. Additionally, the findings aligned with the results obtained by **Eldeep et al. [28]** in their study conducted at Fayoum University in Egypt. The results showed a high positive predictive effect of previous education in the technical health field and

training courses on overall professionalism, with a p-value of less than 0.01. Furthermore, there was a slight positive predictive effect of female sex on overall professionalism, with a p-value of less than 0.05.

As regard to correlation, there was a significant statistical relation between demographic characteristics (age, sex & training hospital) and total level of critical thinking disposition among the studied nurses, at $P = \leq 0.01$. From the researchers' point of view, this may be due to the older nurse having a higher level of attitudes, beliefs, and values often seen in those who are critical thinkers. Moreover, older nurses would be self-aware, genuine, curious, honest, confident, resilient, open-minded, flexible, proactive, persistent, creative, or sensitive to diversity, a question that future research must focus on.

As well result conducted by **Zuriguél-Pérez et al. [25]** concluded that critical thinking skills are expected to improve as academic courses progress. it showed a positive relation between age and academic course, obtaining higher critical thinking skills scores. On the same direction, the study finding was consistent with result for **Ciftci et al. [29]** which concluded that there was a significant statistical relation between demographic characteristics (female sex) and total level of critical thinking disposition in relation to truth-seeking, analyticity, open-mindedness and systematicity among the studied nursing interns.

Regarding to correlation matrix between cumulative total score of nursing competency, critical thinking disposition and research utilization among the studied nursing interns. It clarifies that, there was

Conclusion:

Based on the results of the present study, it can be concluded that:

The study revealed that less than two-thirds of the nursing interns included in the study demonstrated a competent level of nursing competency. Additionally, they exhibited a positive inclination towards critical thinking disposition and a good level of research utilization. Furthermore, the study found significant statistical relations between demographic characteristics and the overall level of nursing competence, research utilization disposition, and critical thinking disposition among the nursing interns. Moreover, the study identified a highly significant positive correlation between the total scores of nursing competency, critical thinking disposition, and research utilization among the nursing interns who were examined.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the Ethics Committee of faculty of nursing, Helwan University.

highly statistically positive correlation between total score of nursing competency, critical thinking disposition and research utilization among the studied nursing interns.

On the same direction, the study finding was parallel with result conducted by **Zuriguél-Pérez et al. [25]** which concluded that critical thinking skills in their substantive and dialogic dimensions in nursing students will positively impact their professional performance in providing safe and effective care, as well as in the nursing practice and decision-making skills.

The present study result was congruent with a study conducted at Minia University Hospital in Egypt by **Thabet et al. [30]** which concluded that positive correlation between studied variables (clinical competence, clinical decision making, and perceived autonomy support) among internship nursing students.

Additionally, the study finding was consistent with **Towfik et al. [31]** which indicated that there was a highly statistically significant positive correlation between critical thinking knowledge, disposition and skills of the studied nursing interns ($P= 0.000$).

Finally, the study results supported less than two-thirds of the studied nursing interns had competent level of nursing competency, and positive inclination regarding critical thinking disposition. More than two thirds had a good level of research utilization among the studied nursing interns. Moreover, there was highly statistically positive correlation among nursing interns' perception of competencies, critical thinking, and research utilization.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation.

CONSENT FOR PUBLICATION

Written informed consent for participation was obtained from each study participant.

STANDARDS FOR REPORTING

STROBE guidelines and methodology were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting this study's findings are available on request from the corresponding author.

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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