Original Article

Self-assessment of Nursing Competency among Nurse Interns at Faculty of Nursing Damanhour University

Sabreen Sobhy Bassiouny Ali [1] Hend Abo El-Soud Ahmed [2] Sally Abd El Hamid Fayed [3]

1. Nurse Specialist, Nursing Education Department, Faculty of Nursing, Damanhour University, Egypt.
2. Professor of Nursing Education, Faculty of Nursing, Damanhour University, Egypt.
3. Assist. Prof. of Nursing Education, Faculty of Nursing, Damanhour University, Egypt.

*Corresponding author: Sabreen Sobhy Bassiouny Ali, Nurse Specialist, Nursing Education Department, Faculty of Nursing, Damanhour University. Egypt, Sabreen.Ali@nur.dmu.edu.eg

Abstract:

Background: Nursing competency is a considerable issue in healthcare as it is a critical factor that governs the quality of health services. Therefore, it is important to develop nurses' competencies. **Aim:** To determine self-assessment of nursing competency among nurse interns at Faculty of Nursing Damanhour. **Research design**: A descriptive correlational design **Settings:** This study was conducted at Faculty of Nursing Damanhour University throughout the academic year 2023-2024. **Subjects:** 257 nurse interns throughout the academic year 2023-2024 who spent at least 3 months of internship and were available at the time of data collection and accepted to participate at the study from approximately (770 nurse interns). **Tool:** Nurse Competence Scale (NCS) was used. **Results**: There were very strong significant correlations between their overall nurse competence, cumulative university grade and family income. **Conclusion:** Nearly three fifth (57.7%) of nurse interns had a moderate level overall nurse competence. **Recommendations**: Design guide lines for the preceptors to govern the nurse interns and facilitate their learning. Foster supportive learning environment through one on one guidance and role modelling. Encourage nurse interns to look for mentors within the nursing team.

Keywords: self-assessment, nursing competence and nurse intern.

Introduction:

The growing complexity and the increased number of patients with chronic diseases, the high demands for less institutionalized patient care, and the increased emphasis on person-centered care have all led to significant developments in healthcare organizations. These factors call for nurse interns who are knowledgeable and well-prepared.(1)Also, many healthcare institutions claim that graduate nurses have insufficient education & clinical experience. All these things don't indicate an optimal care. (2)

Graduate nurses need to assess themselves to be professionals and maintain continuous professional development. This can be through Self-assessment "it is an assessment strategy of self-report & self-reflection". It provides a valid approach to assess the actual competency level of nurses. Furthermore, it empowers nursing professionals to self-reflection on their practice and also request

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resources to address perceived skills' deficits based on a systematic self-assessment of their competencies. [3]

Moreover, nursing competency is a considerable issue in health care as it is a critical factor that governs the quality of health services. Therefore, it is important to develop nurses' competencies.[4,5] Competence is "the ability to integrate knowledge and skills to attitudes and values into practice".[6] Consequently, higher education must ensure that the graduates `acquired the competencies that qualify them to accomplish their roles competently and ethically.[7]

Furthermore, nursing interns are recently graduate students with little practical work experience. These novices are in the process of enhancing their competencies in the delivery of quality nursing care with the guidance of the preceptors. [8] When the nursing intern transitions from dependent supervised practice to independent collaborative practice, this experience serves as the foundation for knowledge application, skill development, and professional socialization. This can be through their nursing internship; is an academically structured system of experience and instruction that leads to the acquisition of the knowledge, skills, and qualities necessary for the practice of professional. [9]

Thus, higher education providers concern with nurse interns to be well prepared for their future career as nursing internship is the professional learning experiences that the nursing student can gain to succeed in their future careers, give interns hands-on experience with actual patients, along with support from expert clinicians. Also, it helps nurses discover what they find most interesting while giving them a chance to acquire valuable skills and give them the chance to test their knowledge.[10]

Moreover, evaluating competency of nurse interns saves many lives and resources as academic community prepare professional future nurses to meet critical competencies. It provides data to the academic community's policy makers that help them make informed decisions related to current actual nursing competency level. It also helps academic community assess the current competency level of graduating nursing students, and identify the fundamental training development needs of nursing students to be nursing professionals, develop continuous education programs to improve low score competency areas and improve the academic curriculum. [11]

Significance of the study:

According to Bochner (2023) [12], nurse interns, nursing education, and all stakeholders will benefit from the information gained from their competency's self-assessment by gaining valuable insight into providing safe, quality care and establishing congruent entry-level competencies which required for career. [12] Furthermore, according to Fitzgerald (2019) it provides an overview on nurse

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interns' competencies to improve it and reduce potential medical errors which resulting from incompetency. [14]

Additionally, according to Ramerz (2020) [13], it helps them improve their low score competency areas. Also, it may help nursing faculties improve their nursing curriculum and better generate future nurse interns. Moreover, it provides data that help academic community's policymakers make informed decisions based on realistic information connected to nursing competencies. [13]

Aim of the study:

Determine self-assessment of nursing competency among nurse interns at Faculty of Nursing Damanhour.

Research Question:

What is the nursing competency level of the nurse interns?

Materials and Methods

Research design:

A descriptive correlational design was used to carry out this study.

Setting:

The study was conducted at Faculty of Nursing Damanhour University throughout the academic year 2023-2024.

Subjects:

257 nurse interns throughout the academic year 2023-2024 who spent at least 3 months of internship and were available at the time of data collection and accepted to participate at the study from approximately (770 nurse interns).

Sampling size:

The Epi info -7 program was used to estimate the study sample based on the following parameters: Number of nurse interns: 770. Anticipated frequency: 50%, Confidence coefficient: 95%, acceptable error: 5%, 257 nurse interns is the minimum sample size. A larger sample size of 260 nurse intern was used.

Sampling technique:

Convenient sample technique was used.

Tool for data collection: Nurse Competence Scale (NCS): [6,13]

Part 1: this part was developed according to jury committee's modifications and related literatures. It contains information about:

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- Socio-demographic characteristics as personal data: age, gender, social status, family income, residence…
- Academic back ground: type of secondary school, cumulative academic grade, number of health care related certificates or training programs…
- Medical history: length, weight and presence of chronic disease…..
- Nursing internship related data: type of hospital and work experience…

Part 2:

Nursing competency scale (NCS) was used to assess nurse interns' nursing competencies. This tool was adopted by Meretoja et al., (2004) [6] and developed by Ramirez (2020) [13] consists of 73-item comprising seven competence categories. Clearly; helping role (7 items), teaching-coaching (16 items), diagnostic functions (7 items), management situations (8 items), therapeutic interventions (10 items), ensuring quality health care (6 items), and work role competencies (19 items).

Scoring system: The response alternative was a four-point scale with scores ranged from 1 to 4 (1 = very low, 2 =low, 3 = good, 4 =very good)**.** The overall score ranged from (73-292)**.**

- Low NCS level: 73 - 145 (< 50%)
- Moderate NCS level: 146 – 218 (50 % to < 75%)
- High NCS level: 219 – 292 (≥ 75 %)

- **Methods**
- The tool was translated into Arabic to be understood by the nurse interns and any necessary changes were made.
- Five experts reviewed the tool's validity, clarity, applicability, comprehensiveness, and relevance; changes were made based on the experts' opinions. Some questions were added to part1and other questions were paraphrased in part2.
- A pilot study was conducted on twenty-seven nurse interns, or 10% of the sample size, to evaluate the tool's applicability and clarity as well as identify any issues or challenges encountered during data collection. These interns were not included in the sample. As a result, the required adjustments were made.
- The Cronbach's alpha test indicated that the tool's reliability was 0.972.
- The researcher used a self-administered questionnaire to collect data for this study. After explaining the purpose of the study, it was given to the nursing interns by hand at the end of the workday.

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- In order to verify that all questions were addressed and to guarantee the objectivity of the responses from the nursing interns, the questionnaire was filled out in front of the researcher. All questions were addressed, and appropriate explanations were provided.
- It took about 20 minutes to complete the survey. Four months were spent gathering the data, from the end of March to the end of July.

Ethical considerations

- Research approval: a formal approval was granted from The Dean of Damanhur University's Faculty of Nursing to carry out the study.
- Informed consent: following an explanation of the study's purpose, the study participant provided written informed consent.
- The study participant's anonymity was guaranteed.
- The collected data was kept private and confidential throughout the study's implementation.
- The right to decline participation in the study was guaranteed.

Data analysis:

- The collected data were organized, tabulated and statistically analyzed using the statistical package for social science IBM SPSS (version 23).
- Descriptive statistical measures, which included: numbers, percentages, Arithmetic mean ($\bar{X}$), Chi square (X^2) and Standard deviation (SD) as demographic characteristics as personal data; e.g. age, gender, residence, academic back ground and work back ground data; e.g., type of hospital, work experience, number of health care related certificates or training programs.
- Pearson correlation was done to measure the degree of association between dimensions of NCS and Overall Nurse Competence level.
- The level of significance selected for this study was Monte Carlo (MCP); ($P \leq 0.05$).
- Multivariate Linear Regression Analysis for factors affecting Overall Nurse Competence.
- Cronbach's Alpha was done to assess reliability of Nurse Competence Scale.
- The study sample was estimated based on Epi info -7 program.

Results:

Table (1): illustrates the Overall Nurse Competence Scale (NCS) as nearly three fifth (57.7%) had a moderate level followed by (38.8%) had low level and the highest level (3.5%) with a mean (52.08±12.80). Also, it shows that the highest dimension as perceived by the studied nurse interns

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was related to dimensions namely; therapeutic interventions (61.2%), while the lowest levels dimensions namely; helping role (53.1 %).

Table (1): Distribution of Nurse Interns' Overall Competence levels (n =260)

Variables	Low		Moderate		High		Total score	Mean percent score
	No.	%	No.	%	No.	%	Mean ± SD	Mean ± SD
Helping role	107	41.1	138	53.1	15	5.8	20.64±3.88	48.72±13.85
Teaching-coaching	92	35.4	149	57.3	19	7.3	48.76±9.63	51.18±15.05
Diagnostic functions	69	26.5	152	58.5	39	15.0	22.10±4.03	53.94±14.38
Management situations	72	27.7	156	60.0	32	12.3	25.04±4.81	53.26±15.03
Therapeutic interventions	71	27.3	159	61.2	30	11.5	31.08±5.89	52.69±14.72
Ensuring quality health care	79	30.4	152	58.5	29	11.1	18.45±3.64	51.89±15.17
Work role competencies	83	31.9	149	57.3	28	10.8	59.21±10.37	52.90±13.64
Overall Nurse Competence Scale (NCS)	**101**	**38.8**	**150**	**57.7**	**9**	**3.5**	**225.28±37.69**	**52.08±12.80**

Table (2): illustrates the relation between demographic characteristics and Overall Nurse Competence of the studied nurse interns. The table reveals that there was no statistically significant relationship between demographic characteristics and the overall nurse interns' competency.

Table (2): Relation between demographic characteristics and Overall Nurse Competence (n=260)

Demographic characteristics	Overall Nurse Competence						χ^2	MCp
	Low (n = 101)		Moderate (n = 151)		High (n = 8)			
	No	%	No	%	No	%		
Age (years)								
20- <22	9	8.9%	14	9.3%	1	12.5%	2.138	0.690
22 - <23	33	32.7%	60	39.7%	3	37.5%		
>23	59	58.4%	77	51.0%	4	50.0%		
Gender								
Male	26	25.7%	33	21.9%	2	25.0%	0.604	0.698
Female	75	74.3%	118	78.1%	6	75.0%		
Social status								
Single	65	64.4%	93	61.6%	8	100.0%	4.298	0.106
Married	36	35.6%	58	38.4%	0	0.0%		
The type of the family								
Nuclear	61	60.4%	103	68.2%	5	62.5%	1.890	0.386
Extended	40	39.6%	48	31.8%	3	37.5%		

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Number of children if you are married								
No	76	75.2%	105	69.5%	8	100.0%	3.702	0.406
1	20	19.8%	37	24.5%	0	0.0%		
2	5	5.0%	9	6.0%	0	0.0%		
Number of brothers and sisters								
No	1	0.9%	3	1.9%	0	0.0%	8.919	0.311
1	7	6.9%	14	9.3%	0	0.0%		
2	35	34.7%	49	32.5%	5	62.5%		
3	35	34.7%	68	45.0%	2	25.0%		
4+	23	22.8%	17	11.3%	1	12.5%		
Your ranking among your brothers								
The first	46	45.5%	78	51.7%	3	37.5%	1.475	0.982
The second	30	29.7%	39	25.8%	3	37.5%		
The third	14	13.9%	19	12.6%	1	12.5%		
Fourth and more	11	10.9%	15	9.9%	1	12.5%		
Father's level of education								
Illiterate	3	3.0%	13	8.6%	1	12.5%	15.226	0.153
Read and write	6	5.9%	6	4.0%	0	0.0%		
Elementary	3	3.0%	3	2.0%	1	12.5%		
Preparatory	7	6.9%	6	4.0%	0	0.0%		
Secondary	10	9.9%	7	4.6%	0	0.0%		
Diploma	50	49.5%	75	49.7%	3	37.5%		
Above average	22	21.8%	41	27.1%	3	37.5%		
Father's job								
No	15	14.9%	17	11.3%	0	0.0%	2.116	0.714
Employee	42	41.6%	72	47.7%	3	37.5%		
Private	44	43.5%	62	41.0%	5	62.5%		

χ^2: **Chi square test** **MC: Monte Carlo**
*: Statistically significant at $p \leq 0.05$

Table (3): illustrates the relation between demographic characteristics and Overall Nurse Competence of the studied nurse interns. The table reveals that there was statistically significant relationship such as; family income per month (P=0.016) and living in a separate room at their house (P=0.043).

Table (3): Relation between demographic characteristics and Overall Nurse Competence (n=260)

Demographic characteristics	Overall Nurse Competence						χ^2	MCp
	Low (n = 101)		Moderate (n = 151)		High (n = 8)			
	No	%	No	%	No	%		
Mother's level of education								
Illiterate	8	7.9%	18	11.9%	2	25.0%	12.813	0.311
Read and write	11	10.9%	12	7.9%	0	0.0%		
Elementary	3	3.0%	4	2.6%	0	0.0%		
Preparatory	8	7.9%	4	2.6%	1	12.5%		
Secondary	1	1.0%	3	2.0%	0	0.0%		
Diploma	61	60.4%	94	62.3%	4	50.0%		

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Above average	9	8.9%	16	10.7%	1	12.5%		
Mother's job:								
No	3	3.0%	3	2.0%	0	0.0%	1.437	0.837
Employee	15	14.9%	21	13.9%	0	0.0%		
Private	83	82.1%	127	84.1%	8	100.0%		
Family income per month								
Not enough	24	23.8%	20	13.2%	1	12.5%	11.262*	0.016*
Enough	71	70.3%	124	82.2%	5	62.5%		
Enough and save it	6	5.9%	7	4.6%	2	25.0%		
Is your salary of internship enough for you?								
Yes	5	5.0%	18	11.9%	0	0.0%	2.566	0.275
No	96	95.0%	133	88.1%	8	100.0%		
Residence								
Rural	80	81.6%	121	82.9%	7	100.0%	1.553	0.460
Urban	18	18.4%	25	17.1%	0	0.0%		
Do you live in a separate room at your house?								
Yes	79	78.2%	121	80.1%	3	37.5%	6.273*	0.043*
No	22	21.8%	30	19.9%	5	62.5%		
Is your house close to the hospital where you perform your internship?								
Yes	12	11.9%	17	11.3%	0	0.0%	1.105	0.575
No	89	88.1%	134	88.7%	8	100.0%		
If the answer is (no), how long does it take to reach the hospital? (n=231)								
	Low (n = 89)		**Moderate (n = 134)**		**High (n = 8)**		5.420	0.214
	No	%	No	%	No	%		
30 minute	12	13.5%	29	21.7%	0	0.0%		
Less than30 minute	19	21.3%	37	27.6%	2	25.0%		
More than30minute	58	65.2%	68	50.7%	6	75.0%		
What is the means of transportation to go there(n=231)								
	Low (n = 89)		**Moderate (n = 134)**		**High (n = 8)**		3.185	0.161
	No	%	No	%	No	%		
Microbus	87	97.8%	125	93.3%	8	100.0%		
Tuk-tuk	2	2.2%	9	6.7%	0	0.0%		

χ^2: **Chi square test** **MC: Monte Carlo**

*: Statistically significant at $p \leq 0.05$

Table (4): showed the relation between history of education, medical history and Overall Nurse Competence. According to table there was statistically significant relationship between history of education namely: cumulative university grade (P=0.024) and take training courses during your internship period, specific to the college (P= 0.014).

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Table (4): Relation between History of education/ Medical history and Overall Nurse Competence (n=260)

History of education/ Medical history	Overall Nurse Competence						χ^2	MCp
	Low (n = 101)		Moderate (n = 151)		High (n = 8)			
	No	%	No	%	No	%		
History of education								
What type of high school you graduated from?								
Private Secondary school	0	0.0%	3	2.0%	1	12.5%	10.672	0.091
Public Secondary school	49	48.5%	71	47.0%	1	12.5%		
Technical institute of nursing post high secondary school	15	14.9%	13	8.6%	1	12.5%		
Technical institute of nursing, five-year system	37	36.6%	64	42.4%	5	62.5%		
What is your cumulative university grade?								
Excellent	26	25.7%	48	31.8%	4	50.0%	13.417*	0.024*
Very good	52	51.5%	93	61.6%	4	50.0%		
Good	22	21.8%	9	6.0%	0	0.0%		
Pass	1	1.0%	1	0.6%	0	0.0%		
Do you have experience certificates or training courses in the field of nursing?								
Yes	17	16.8%	30	19.9%	4	50.0%	2.745	0.225
No	84	83.2%	121	80.1%	4	50.0%		
Do you take training courses during your internship period, specific to the college?								
Yes	22	21.8%	49	32.5%	6	75.0%	8.156*	0.014*
No	79	78.2%	102	67.5%	2	25.0%		
Is it useful for you? (n = 77)								
	Low (n = 22)		Moderate (n = 47)		High (n = 8)		1.727	0.410
	No	%	No	%	No	%		
Yes	21	95.5%	42	89.4%	7	87.5%		
No	1	4.5%	5	10.6%	1	12.5%		
If you have anything to add about courses you need, please mention them								
No	69	68.3%	80	53.0%	7	87.5%	7.636	0.085
Language courses	26	25.7%	61	40.4%	1	12.5%		
Computer courses	6	6.0%	10	6.6%	0	0.0%		
Medical history								
Body Mass Index (BMI)								
Underweight	0	0.0%	3	2.0%	1	12.5%	8.798	0.172
Normal	60	59.4%	71	47.0%	5	62.5%		
Overweight	39	38.6%	68	45.0%	2	25.0%		
Obese	2	2.0%	9	6.0%	0	0.0%		
Do you suffer from any chronic disease?								
Yes	6	5.9%	11	7.3%	2	25.0%	1.333	0.503
No	95	94.1%	140	92.7%	6	75.0%		

χ^2: **Chi square test** **MC: Monte Carlo**

*: Statistically significant at $p \leq 0.05$

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Table (5): demonstrates the relationship between the level of satisfaction with the nursing profession and Overall Nurse Competence. There was statistically significant such as: satisfaction with being a nurse (P=0.020) and changing as a nurse (P=0.028).

Table (5): Relation between level of satisfaction with the nursing profession and Overall Nurse Competence (n=260)

level of satisfaction with the nursing profession	Overall Nurse Competence						χ^2	MCp
	Low (n = 101)		Moderate (n = 151)		High (n = 8)			
	No	%	No	%	No	%		
Data about the level of satisfaction with the nursing profession								
How do you feel about the nursing profession?								
Feeling proud	7	6.9%	3	2.0%	0	0.0%	12.229	0.098
Defensive	51	50.5%	100	66.2%	8	100.0%		
Feeling ashamed	10	9.9%	9	6.0%	0	0.0%		
Attacks the nursing profession	23	22.8%	31	20.5%	0	0.0%		
Other	10	9.9%	8	5.3%	0	0.0%		
Are you satisfied with being a nurse								
Yes	68	67.3%	123	81.5%	8	100.0%	7.862*	0.020*
No	33	32.7%	28	18.5%	0	0.0%		
Would you like to change your as a nurse?								
Yes	46	45.5%	55	36.4%	0	0.0%	6.756*	0.028*
No	55	54.5%	96	63.6%	8	100.0%		
Do you work in another profession than nursing in addition to internship								
Yes	10	9.9%	13	8.6%	0	0.0%	0.981	0.612
No	91	90.1%	138	91.4%	8	100.0%		
Data specific to internship								
Type of hospital of nursing internship								
Governmental	23	22.8%	51	33.8%	2	25.0%	3.389	0.174
Private	78	77.2%	100	66.2%	6	75.0%		
How long did you spend from your internship								
<6 months	4	4.0%	15	9.9%	2	25.0%	2.596	0.194
≥6 months	97	96.0%	136	90.1%	6	75.0%		
Do you work in a private hospital in addition to your internship								
Yes	22	21.8%	27	17.9%	0	0.0%	2.752	0.253
No	79	78.2%	124	82.1%	8	100.0%		
Years of work experience in the field of nursing								
<1	44	43.5%	49	32.5%	2	25.0%	4.685	0.295
1 - <5	42	41.6%	74	49.0%	5	62.5%		
5+	15	14.9%	28	18.5%	1	12.5%		

χ^2: **Chi square test** **MC: Monte Carlo**

*: Statistically significant at $p \leq 0.05$

Table (6): reveals the relation between data specific to nursing competence and Overall Nurse Competence. According to the table there was statistically significance relationship such as: the

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positive impact of clinical practice on their nursing competence (P= 0.007) and role of the intern supervisor to develop their nursing competency (P= 0.003).

Table (6): Relation between Data specific to nursing competence and Overall Nurse Competence (n=260)

Data specific to nursing competence	Overall Nurse Competence						χ^2	MCp
	Low (n = 101)		Moderate (n = 151)		High (n = 8)			
	No	%	No	%	No	%		
Data specific to nursing competence								
Do you realize the importance of nursing competence and its impact on healthcare?								
Yes	98	97.0%	148	98.0%	8	100.0%	1.408	0.476
No	3	3.0%	3	2.0%	0	0.0%		
Did the clinical practice (in hospital and with patients) affect you?								
Yes	99	98.0%	145	96.0%	8	100.0%	0.632	0.760
No	2	2.0%	6	4.0%	0	0.0%		
How does it impact your nursing competence?								
Positive	63	62.4%	117	77.5%	5	62.5%	9.654*	0.007*
Negative	38	37.6%	34	22.5%	3	37.5%		
Does the intern supervisor help you develop your nursing competency?								
Yes	66	65.3%	126	83.4%	7	87.5%	11.674*	0.003*
No	35	34.7%	25	16.6%	1	12.5%		
Do nursing supervisors and nursing staff help you acquire new experience?								
Yes	0	0.0%	0	0.0%	0	0.0%	-	-
No	101	100.0%	151	100.0%	8	100.0%		
What are your suggestions for developing your nursing competency?								
No suggestion	14	13.9%	19	12.6%	1	12.5%	12.997	0.273
Attending self-development training courses	20	19.8%	36	23.8%	0	0.0%		
Exploiting the internship period to gain nursing experience	11	10.9%	32	21.2%	3	37.5%		
Buy nursing books for self-development	18	17.8%	23	15.2%	1	12.5%		
Diploma in Infection Control	9	8.9%	16	10.6%	2	25.0%		
Diploma in Quality in Nursing Care	22	21.8%	21	13.9%	1	12.5%		
Computer and English language courses	7	6.9%	4	2.7%	0	0.0%		

χ^2: **Chi square test** **MC: Monte Carlo**

*: Statistically significant at $p \leq 0.05$

Table (7): explains the correlation between the studied variables of the Nurse Competence Scale and the overall Nurse Competence among nurse interns. There was a highly statistically significant positive correlation between the studied variables of the Nurse Competence Scale and the Overall Nurse Competence among nurse interns namely: (Helping role ($p<0.001 r=0.793$) , Teaching-coaching ($p<0.001 r=0.904$) Diagnostic functions ($p<0.001 r=0.842$), Management situations ($p<0.001 r=0.896$), Therapeutic interventions ($p<0.001 r=0.891$), Ensuring quality health care ($p<0.001 r=0.867$), Work role competencies ($p<0.001 r=0.946$).

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Table (7): Correlation between the Nurse Competence Scale and the Overall Nurse Competence (n=260).

		Helping role	Teaching-coaching	Diagnostic functions	Management situations	Therapeutic interventions	Ensuring quality health care	Work role competencies	**Overall**
Helping role	**r**								
	p								
Teaching-coaching	**r**	0.790*							
	p	<0.001*							
Diagnostic functions	**r**	0.587*	0.739*						
	p	<0.001*	<0.001*						
Management situations	**r**	0.608*	0.713*	0.763*					
	p	<0.001*	<0.001*	<0.001*					
Therapeutic interventions	**r**	0.600*	0.708*	0.758*	0.876*				
	p	<0.001*	<0.001*	<0.001*	<0.001*				
Ensuring quality health care	**r**	0.622*	0.712*	0.700*	0.776*	0.763*			
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*			
Work role competencies	**r**	0.707*	0.792*	0.737*	0.838*	0.821*	0.843*		
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*		
Overall Nurse Competence	**r**	0.793*	0.904*	0.842*	0.896*	0.891*	0.867*	0.946*	
	p	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	

r: Pearson Correlation coefficient *: Statistically significant at $p \leq 0.05$

Table (8): illustrates the dependent variable was overall nurse competence. Regression model results revealed that family income per month, living in a separate room at house and cumulative university grade were significant predictors for overall nurse competence with a statistically significant positive correlation between them with (P= 0.002, 0.016 & 0.024; respectively) and an increase in all these variables is associated with an increase in overall nurse competence.

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Table (8): Multivariate Linear Regression Analysis for factors affecting Overall Nurse Competence (n =260)

Variable	B	Beta	t	p	95% CI	
					LL	UL
Family income per month	15.942	0.195	3.194*	0.002*	6.112	25.772
Do you live in a separate room at your house?	13.666	0.149	2.420*	0.016*	2.544	24.788
What is your cumulative university grade?	-7.983	-0.140	-2.265*	0.024*	-14.928	-1.039
Do you take training courses during your internship period, specific to the college?	-2.683	-0.033	-0.522	0.602	-12.808	7.442
Are you satisfied with being a nurse	-12.156	-0.136	-1.839	0.067	-25.175	0.863
Would you like to change your as a nurse?	5.323	0.069	0.973	0.331	-5.449	16.096
How does it impact your nursing competence?	-1.964	-0.024	-0.330	0.742	-13.692	9.764
Does the intern supervisor help you develop your nursing competency?	-8.008	-0.090	-1.217	0.225	-20.966	4.950
R^2=0.125 , Adjusted R^2=0.096 , ,F= 4.332*,p<0.001*						

F,p: f and p values for the model
R^2: Coefficient of determination
B: Unstandardized Coefficients
Beta: Standardized Coefficients
t: t-test of significance
LL: Lower limit UL: Upper Limit
*: Statistically significant at $p \leq 0.05$

Discussion

Nursing competencies can ensure quality, safety, and health assistance while reducing health costs, so it is essential to establish their accurate measurement in order to ensure their effectiveness. [15] The assessment of the competencies matching to the different proficient profiles of future nurse interns is essential to their training. In this sense, nurse interns' self-assessment needs to be incorporated into their training. [16] Self-assessment of nursing competency is a fundamental component of workforce planning, human resource management, and quality assurance systems. [17]

Therefore, nurse interns may have a valuable opportunity to reflect on their behavior and re-evaluate their knowledge and skills on a regular and systematic basis by using self-assessment. Also, healthcare organizations may find the feedback information very helpful in determining the competencies required for a successful nursing practice. Moreover, the self-assessment of nursing

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interns will reveal their working style. It helps them better understanding the education they require meeting the demands of more complex care. [17]

According to the current findings about **the nurse interns' overall nurse competence**, around three-fifth of studied nurse interns had a moderate level of overall nurse competence scale. The nursing competence scale of nurse interns in all seven competence dimensions was also on average assessed as moderate. From the researcher's point of view they assessed themselves as moderate because; they may have a realistic assessment of their knowledge and abilities, and identifying areas in which they require development.

This self-awareness is essential for career advancement. Also, their careers are still in their early phases. They may still believe that not all of the competencies needed for a higher self-assessment have been mastered. In the same line, a study by Ali and Khalifa (2024)[18], they revealed that over three-fifths of the participants exhibited a moderate level of professional competency.[18]

Moreover, the current findings revealed that all dimensions of NCS had a significant relationship with their overall nurse competence. This outcome is in line with a study by Iacorossi L et al. (2020)[19], they used the NCS in their evaluation and discovered that nurses ranked their ability to perform therapeutic interventions as one of the Nurse Competence Scale's (NCS) highest dimensions.[19]

On the other hand, the current findings revealed that the lowest score in the helping role dimension. This might be due to different factors, including a lack of exposure to a variety of patient situations, a lack of clinical experience, or inadequate mentoring and training. Similarly, in Italy (2023), Notarnicola et al. [20] who used NCS in the assessment of nurses' competency and found that the highest competency sub dimensions' mean score of the studied subjects was the helping role sub dimension. [20]

Concerning the demographic characteristics of the studied nurse interns, the current findings revealed that half of them were aged more than 23 years, three quarters of them were female, two thirds were single and majority of them were from rural areas. Unfortunately, there was no significant relation between demographic characteristics and overall nurse competence of the studied nurse interns. This was supported by Faraji et al. (2019) [21], they found no statistically significant variations in clinical competence and demographic characteristics of the studied subjects. [21]

Regarding age in this study, there was no significant relationship between age and overall nurse competence. From the researcher's point of view that nurse interns at the same age. Also, the nature of our community in Egypt is that students start education at the same time. In the same

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manner, Kokkiz R et al. (2024) [22] mentioned that there was no significant relationship between age and competence level of the involved nursing students. [22]

Regarding gender in the current study, three quarters of them were female. This could be explained by the fact that nursing, which has historically been associated with femininity in our society. So, entering the nursing field heavily affected by gender norms.[23] Similarly, persistent stereotypes that portray nursing as a feminine profession deter men from pursuing careers in the field in Western nations like the United Kingdom.[24] In the same manner the current finding was supported by Adib-Hajbaghery and Eshraghi-arani et al. (2018)[25], they reported that there was no statistically significant relationship between gender and clinical competence of nurses.[25]

Regarding marital status, there was no statistically significant relation between marital status and overall nurse competence of the nurse interns. It was supported by Karami et al. (2017) [26], they found no significant relation between the self-assessment of nurses and their marital status.[26]

Regarding residence, the majority of nurse interns were from rural areas. Also, there was no statistical significant variation between the overall nursing competence of the nurse interns and their residence. This may be due to El-Beheira governorate is a rural district in its nature. Supporting this a study conducted by Ghazy et al. (2021) [8], they found that the majority of the participants were from rural areas. [8]

Regarding family income, most of them had enough income and about 5% had enough and more income. In addition, about 15% did not have enough income. Also, there was a significant relation between their family income and their overall nursing competence. This is interpreted as nurses from wealthier households frequently have greater access to learning opportunities and resources, which can improve their competency. On the other hand, financial strain can have a detrimental impact on both professional and academic advancement. The current findings were supported by a study that was conducted by Suja et al. (2024)[27], they found a statistically significant difference between nursing professionals' economic power and the influence of nursing education.[27]

Concerning living in a separate room, according to our findings majority of them live in a separate room at their homes. Also, there was a significant relation between living in a separate room and their overall nursing competence. This is interpreted as sustaining high levels of nursing competency requires a supportive living environment. Because living in separate rooms can have an impact on nursing interns' stress levels and emotional health, which can then affect their competency.

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This was supported by Ahmadi et al. (2020) [28], they conducted a study and came to the conclusion that a conducive study environment is essential for learning and remembering information. Nurse interns may perform better in clinical settings if they have a separate room where they can concentrate on their studies and practice skills. Additionally, by clearly defining the boundaries between personal and professional spaces, living in a separate room can support the maintenance of a healthy work-life balance. This equilibrium can improve nursing competency and is necessary for general well-being. [28]

Regarding their cumulative university grade, nearly three fifth of them had a very good score. Also, there was a highly significant relation between their cumulative university grade and their overall nursing competence. This may have rationales as follow; a stronger theoretical knowledge base is often associated with higher cumulative university grade and is crucial for clinical decision-making and problem-solving. Well-developed critical thinking abilities are often a sign of academic success and are essential for evaluating patient conditions and carrying out the right interventions. In a similar vein, Hoshino et al.'s (2024)[29]conducted a study and they found that the higher the learning score, the higher the nursing competence score.[29]

Concerning training courses, there was a significant relation between training courses and overall nursing competence. As training programs give nursing interns the chance to hone their clinical skills, which are necessary for competent practice. Additionally, by covering the most recent medical knowledge and best practices, these courses make sure that nursing interns are knowledgeable about the most recent standards of care. Additionally, nurse interns can increase their confidence, which is essential for providing effective patient care, by learning new skills and information.

In the same line, a study by Serafica & Diego (2024) [30], they sought to ascertain the attitudes, abilities, and knowledge of nurses in emergency and disaster response in a few Eastern Pangasinan hospitals. It concluded that nurses' knowledge of emergency and disaster response increases with the amount of relevant training they have received. [30]

Regarding the type of internship's hospital, the current findings regarding revealed that three quarters of them were in private hospitals. While the ratio of nurse interns who had moderate score in private hospitals was more than interns who were in governmental hospitals. In particular, those private hospitals prepared nursing interns for the clinical experience by utilizing pre-services training program concerning communication skills, patient education, nursing intervention, and leadership skills, as well as by orienting them to the clinical setting (patient, environment).

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Unfortunately, the current findings revealed that there was no statistical significant relation between type of internship hospital and overall nurse competence. This supported by Mohamadirizi et al. (2015) [31], they reported that there was no statistical significant relationship between public and private hospitals based on the level of clinical competence of nursing students.[31]

Regarding years of experience according to our findings, nearly half of them had less than 5 years of experience. This is due to the fact that they are still working on finishing their training and education. Another observation that those interns who had those years of experience, graduated from technical institute of nursing before joining to the faculty. As academic learning; theoretically and clinically is better than of technical institutes. Furthermore, there was no significant relation between years of experience and overall nurse competence. This is consistent with the findings of Taylor et al. (2020)[32] who conducted a study to assess clinical competence and needs nursing students for further training to advanced their practice. They reported that clinical competence was not significantly predicted by clinical work experience. [32]

Regarding the relationship between level of satisfaction with the nursing profession and overall nursing competence level, the current findings revealed that more than three quarters of them were satisfied, didn't like to change their career as a nurse and had a positive impact of their clinical environment. They also reported that their intern supervisors helped them to develop their nursing competency. Also, all these contributing factors had a highly statistical significant relation on their overall nursing competence.

Pertaining to satisfaction with their nursing profession, the nurse interns in our study were also observed to have been positively affected by such and didn't want to change their career as a nurse. From the researcher point of view this may be due to their mentors' support, their academic back ground and previous clinical training. Additionally, nurse interns are more likely to be dedicated to their work, exhibit greater levels of engagement, and strive for patient care excellence when they are happy in their jobs. Satisfied interns are more likely to devote time and energy to professional growth, ongoing education, and staying current with evidence-based procedures.

In the same line, according to a study by Kardaş and Ünlüsoy (2024)[33], they concluded that nurses with higher levels of holistic nursing competence are happier in their positions and are less likely to plan to leave. Additionally, nurses who possess holistic nursing competence offer balance and harmony in their own lives, reflecting this state to their coworkers and the patients they care for. They also offer a chance to foster a positive work environment. [33]

Regarding clinical environment and overall nurse competence, there was relationship between the clinical environment and overall nurse competence among nurse interns. This could be

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because the clinical setting is encouraging and gives nursing interns opportunities for practical experience, constructive criticism, and mentorship from seasoned professionals. This makes learning more enjoyable and aids in the more efficient development of their practical skills. When taken as a whole, these elements produce a favorable clinical setting that greatly improves nursing intern competency, improving patient care and professional advancement.

In addition to this, Nemcová et al., (2024)[34] conducted a study to detect satisfaction with nursing education, competencies, and clinical practice. According to the findings of their study, there was a positive and statistically significant correlation between interns' competencies and assessments of the clinical learning environment. The clinical learning environment was more favorably viewed by nurse interns who demonstrated exceptionally high levels of competence. The development of nursing competencies, the delivery of safe care, and the encouragement to remain in the nursing profession are all facilitated by excellent practice and education. [34]

Regarding mentors role in competency development of nurse interns and overall nurse competence, majority of them reported that their mentors help them develop their nursing competence and there was a highly significant relation with their overall nurse competence. Based on the study findings, it can be concluded that mentors supported nurse interns, promoted professional growth, and facilitated learning. As mentors have a big impact on nursing students' motivation to learn and improve their ability to adapt to new situations. Mentors assist students in maintaining their health and avoiding burnout.

Similarly, Narayanan et al., (2025) [35], they discussed the role of mentors. As mentors took charge of nurse interns' education, gave them a safe space to practice, had a well-defined learning plan, and assisted them in reaching their learning goals and objectives.[35]

Conclusion

From this study it can be determined that through regular evaluations and constructive feedback, nurse interns identify their areas for improvement and strengths, setting objectives that can help in their professional development. The internship program, helped them to work independently, contributed to their work readiness and their professional growth. And the training of interns had a significant impact on all their competencies. On the light of the current study results it can be concluded that studied nurse interns have moderate level of nursing competence. Finally this study emphasized that there is a highly statistical significant positive correlation between the overall nurse competence score and its domains.

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Recommendations

- Pair each intern with an experienced nurse for consistent guidance and support.
- Make sure students receive a comprehensive orientation to the health care facility's policies, safety protocols, and professional conduct expectations before they start their placement.
- Provide in-service training policies for training nursing interns to improve their competency development. Develop training program with clear objectives, clinical rotations and learning out comes.
- Enhance support systems and resource allocation: Make sure nursing students have access to the tools, resources, and facilities they need to succeed in the clinical setting.
- Set clear, measurable goals with follow up evaluation and implement continuous assessment to track nurse interns' development and pinpoint areas in which they require improvement. Give them helpful criticism to help them get better.

Limitations of the study

- Data collection took a long period of time because nurse interns were distributed between different shifts and different hospitals.

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