Newly Graduated Nurses' Career Adaptability and Its Relation to Professional Competence and Professional Development in Intensive Care: A comparative Study

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Abstract
Background: Newly graduated nurses (NGNs) hold a crucial role in intensive care units in delivering safe nursing care. They experience numerous challenges with role transition. As a result, the NGNs must be clinically competent and constantly develop professionally to adapt to these turbulent careers. **Aim:** Assess newly graduated nurses' career adaptability and its relation to professional competence and professional development in intensive care units in two different settings. **Design:** Comparative correlational research design was employed. **Setting:** Tanta University Main Hospital and Kafrelsheikh General Hospital including ICUs. **Subjects:** All available (n=175) newly graduated intensive care nurses at two hospitals. **Tools:** Three tools were utilized: Career Adapt-Ability Scale-5, Nurse Professional Competence-Short Version Scale, and Nurse Professional Development Questionnaire. **Results:** At Tanta and Kafrelsheikh Hospitals, around two-fifths (40% and 38.7%) of nurses had a moderate level of career adaptability. More than half (52.0% and 53.3%) of nurses demonstrated a satisfactory competence level, while 50.0% and 54.7% of them showed low professional development levels at both hospitals, respectively. **Conclusion:** There were statistically significant positive correlations between new graduated nurses' career adaptability and professional competence and professional development at both hospitals, with no statistically significant difference between the two hospitals. **Recommendations:** Nurse managers need to be aware of the primary elements influencing new graduates' career adaptability and facilitate the opportunities for them to grow and develop much professional competence and career adaptability.

Keywords: Career adaptability, Intensive care, Newly graduated nurses, Professional competence & Professional development.

Introduction

Newly graduated nurses (NGNs) represent a significant human resource and main source of nursing supply, with more old nurses entering the workforce **(See et al., 2023)**. They have a great influence on nursing care and hospital development. The NGNs refer to nurses who have been employed for a shortened period of time, less than three years. They challenge difficulties, such as work overloads, critical patients, and complicated interpersonal relations. They also have inadequate practical experience, limited competency, and ineffective interpersonal skills **(Tong et al., 2024)**. Thus, newly graduated nurses transitioning into new professional roles is complicated and requires learning about institutional policies, interacting with colleagues, adjusting to new surroundings, and picking up new skills **(Diaz et al., 2022)**.

Acute care settings have been identified as one area that new nurses find particularly challenging. Newly graduated nurses' competence is necessary to identify their ability to provide acute care. Acute care entails effective management of quickly evolving situations, and nurses must recognize issues early, take appropriate action, assess the situation, and mobilize

assistance **(Sterner et al., 2020)**. The intensive care units are one of the cornerstones of healthcare, where nurses work with patients who are critically ill on a daily basis and face a variety of occupational stressors such as the required professional competencies, low staffing, and quick emergency response **(Willman et al., 2022)**.

Also, nurses in the intensive care units must adhere to strict nursing standards and pay close attention to details to ensure the safety and well-being of patients in this high-risk technical setting. This puts a huge physical and emotional strain on nurses to continuously provide professional and compassionate care in such a high-pressure setting **(Zhang et al., 2022)**. Thus, the NGNs' transition from a secure academic environment to these turbulent work environments encounters a reality shock. Hence, it is imperative for them to be able to professionally adapt to the demands of a nursing career **(Prosen et al., 2023)**. Career adaptability (CA) is the process through which NGNs accept the set policies of the organization to which they belong, internalize the norms and values of the organization, and establish their professional identity via acquiring job knowledge, competences, and interpersonal relations that will enable them to become valuable members of

the organization. It can also be defined as the ability to handle both expected and unpredictable issues arising from job tasks, career transitions, and workplace traumas **(Lee & Lee, 2019)**.

Four aspects of career adaptability can help the NGNs to effectively adapt and manage their careers, including concern, curiosity, control, and confidence **(Sun et al., 2023)**. Concern is future-focused thinking that enables nurses to plan ahead and be ready for whatever may come next. Control is the ability to use self-control to take charge of one's career. Curiosity is the attitude of curiosity toward one's future prospective. Confidence is the ability to make choices which implement one's life plan **(Haenggli & Hirschi, 2020)**.

Newly graduated nurses' challenges in adapting to the workplace can impact both their transition and future career opportunities. Therefore, they must quickly adapt. A variety of elements, such as academic institutions, personality traits, and organizational contributions, can support an efficient transition and the adaptation of new nurses **(Baharum et al., 2023)**. The adaptation process for new nurses must begin during nursing education, which holds the role of equipping nursing students with the necessary knowledge and professional competencies, which have a significant impact on raising levels of confidence in their ability to provide nursing care effectively. In addition, work settings offer a comfortable climate that helps new nurses both physically and emotionally **(Yildiz &Ergun, 2020)**.

Professional competency of the NGNs is one of the key factors that can influence their career adaptability. In recent years, healthcare has become more complex and is changing quickly, putting a lot of pressure on new graduates to succeed in new roles requiring varied competencies **(Prosen &Licen, 2023)**.The professional competence of the NGNs is a necessity for the provision of nursing care. It includes nursing care delivery by holding widely acknowledged professional standards. In addition, all technical and critical thinking qualities are incorporated into nursing care practices, as well as theoretical understanding of nursing concepts and principles, clinical reasoning skills, ethical and moral values, and practical communication abilities **(Grande et al., 2022)**.

Moreover, professionally competent new graduates ought to be knowledgeable of medical terms relevant to care delivery for example; pharmacology knowledge and application translate to patients receiving safe drug administration. Medical concepts also influenced nursing responsibilities such as ensuring patients' examinations and treatments safety, being technically competent when dealing with medical instruments, and explaining unclear

instructions to doctors and other members of the healthcare team **(Grande et al., 2022)**. All of these competencies after graduation represent a critical issue in acute care that is closely linked to patient safety, professional standards, and the nursing profession's credibility **(Kiekkas et al., 2019)**.

Newly graduated nurses' professional competence in ICUs makes them feel more confident and self-controlled, which facilitates their adaptation and fosters their ability to boost their knowledge to maintain nursing competency through continuous professional development **(Lindfors et al., 2022; Ashrafi &Nabhar, 2023)**. Professional development is a critical element of the NGNs transition to nursing career **(Cai, 2021)**. A nurse's career as NGN is marked by continuous professional development that starts during basic education. During first years after hiring, nurses' participation in professional development activities including attending training programs, meetings, and reviewing recent literatures significantly increases. Those activities enhance intention to remain within the organization and sense of support during their role transition **(Adkins, 2023)**. Newly graduated nurses' professional development positively affects their career adaptability. Also, accomplishing career adaptability (CA) has a significant effect on fostering NGNs aspirations to pursue transitional programs and pedagogical transformation to develop career options within organizations **(Walden et al., 2022)**.

Significance of the study

One of the most influential turning points in the nursing career is the change of a recently graduated nurse from a student nurse to an employed nurse **(Hsiao et al., 2021; Hampton et al., 2021)**. This transition entails NGNs adapting rapidly with the challenges of becoming a critical care nurse, including caring for critically ill patients, making important decisions, and handling complex problems. Newly graduated nurses career adaptability requires applying their clinical competences, including theoretical knowledge, skills, norms, and values, to real-life situations. That can be facilitated by engagement in professional development activities, which have a mediating effect between professional competence and career adaptability **(Lee& Lee, 2019; Alharbi et al., 2023)**. So, we employed this study to assess newly graduated nurses' career adaptability and its relation to professional competence and professional development in intensive care units at Tanta University Main Hospital and Kafrelsheikh General Hospital.

Aim of the study:
To assess newly graduated nurses' career adaptability and its relation to professional competence and

professional development in intensive care units in two different settings.

Research questions

- What are the levels of career adaptability among newly graduated nurses in Tanta University and Kafrelsheikh General Hospitals?
- What are the levels of professional competence and professional development among newly graduated nurses in Tanta University and Kafrelsheikh General Hospitals?
- What is the correlation between newly graduated nurses' career adaptability and professional competence and professional development in Tanta University and Kafrelsheikh General Hospitals?
- Is there a difference between Tanta University and Kafrelsheikh General Hospitals regarding newly graduated nurses' career adaptability, professional competence and professional development?

Research design: Comparative correlational research design was employed.

Subjects and Method

Setting

The study was carried out at Tanta University Main Hospital, which belongs to the Ministry of Higher Education and Scientific Research, as well as Kafrelsheikh General Hospital which belongs to Ministry of Health and Population, including cardiology, neurology, medical, pediatric, neonates, surgery, and anesthesia ICUs.

Subjects: All available (n= 175) newly graduated intensive care nurses with bachelor and associate degrees and with two years of working experience. In Tanta University Main Hospital, included all (n = 100) NGNs, and in Kaferelsheik General Hospital, included all (n = 75) NGNs working in ICUs: cardiology, neurology, medical, pediatric, neonate, surgery, and anesthesia. The exclusion criteria are graduated nurses with working experience of more than 2 years and less than six months, and also those who refused to participate.

Data Collection Tools: Three tools were utilized: Career Adapt-Ability Scale-5 (CAAS-5), Nurse Professional Competence-Short Version Scale (NPC-SV-A), and Nurse Professional Development Questionnaire (NPDQ).

Tool (I): Career Adapt-Ability Scale-5 (CAAS-5)

It was originally developed by **Nye *et al*., (2017)** and modified by researchers based on **Paszkowska-Rogacz, (2020)** to assess career adaptability skills among newly graduated nurses. It included two parts:

Part (I): Personal data; age, gender, residency, marital status, working ICU, and employment period.

Part II: The Career Adaptability Scale-5 (CAAS-5) consisted of 30 items categorized into five sub scales: (concern 6 items), (control 6 items), (curiosity 6 items), (confidence 6 items), and (cooperation 6 items).

Scoring system

A five-point Likert scale (1-5) was utilized to measure the responses of newly graduated nurses, where (1) not strong, (2) some what extent, (3) strong, (4) very strong, and (5) strongest. The total score were categorized based on cut- off points at varying levels; high career adaptability level $\geq$ 75%, moderate career adaptability level 60 % $-<$ 75%, and low career adaptability level <60%.

Tool I: Nurse Professional Competence-Short Version Scale (NPC-SV-A)

It was developed by **Nilsson et al., (2019)** and modified by researchers based on **Abuadas, (2023)** to assess self-reported professional competence among newly graduated nurses. It consisted of 35 items categorized into six competency domains as follows: (delivered nursing care 5 items), (value-based nursing care 5 items), (techno-medical care 6 items), (pedagogy in nursing care 5 items), (nursing care documentation & administration 8 items), and (nursing care innovation, administration & management 6 items).

Scoring system

A five-point Likert scale (1–5) was utilized to measure the responses of newly graduated nurses: (1) incompetent, (2) low competent, (3) moderate competent, (4) competent, and (5) highly competent. The total score was categorized based on cut-off points at varying levels as follows: satisfactory professional competence $\geq$ 80% and unsatisfactory professional competence <80%.

Tool III: Nurse Professional Development Questionnaire (NPDQ)

It was developed by the researchers based on **Nwogbe and Haliso, (2020); Brekelmans et al., (2015)** to assess the extent to which newly graduated nurses undertake professional development activities. It consisted of 18 items categorized into four domains as follows: participation in continuing professional education (5 items), participation in research (4 items), participation in clinical practice development (4 items), and participation in organization development (5 items).

Scoring system

A five-point Likert scale (1–5) was utilized to measure the responses of newly graduated nurses: (1) never, (2) rarely, (3) sometimes, (4) often, and (5) Always. The total score was categorized based on cut-off points at varying levels: high professional development level $\geq$ 75%, moderate professional development level 60 % $-<$ 75%, and low professional development level <60%.

Data Collection Method: All three tools were translated by researchers into Arabic and asked five

nursing administration professionals to review the face and content validity of its items, and changes were made based on their comments. **Content validity** values for tools I, II, and III were 93%, 95%, and 90%, respectively. **Testing reliability** for determining tools applicability and reliability. Reliability values using Cronbach's coefficient alpha test for tools I, II, and III were 0.930, 0.944, and 0.891, respectively. **A pilot study** was performed on 18 nurses, who represented 10% and weren't included in the total study subjects. The estimated time to complete the questionnaires was about 10 to 15 minutes for each nurse; minor misconceptions were identified and corrected.

Ethical Considerations: The study was approved with Code Number 396-2-2024 by the Scientific Research Ethical Committee at the faculty of nursing, Tanta University. An approval of the heads and nurse managers of two hospitals was obtained. Then, informed consent was obtained from all participants after researchers clarified the study's purpose. They were guaranteed that the information would be kept anonymous and confidential. Also, they were guaranteed voluntary involvement and the freedom to leave at any moment.

Data Collection Phase: Data was collected from newly graduated intensive care nurses at Tanta Main University Hospital, as well as Kafrelsheikh General Hospitals through giving them the questionnaire sheets to fill in during working hours. Data collection took three months from May 2024 to July 2024.

Data Analysis: For analyzing data, IBM SPSS software version 20.0. (IBM Corp., Armonk, NY) was adopted. To describe qualitative data, numbers and percentages were utilized. The distribution's normality was confirmed by the Kolmogorov-Smirnov test. The terms (minimum, maximum, mean, median, and standard deviation) were employed to explain quantitative data. The significance of the results was at the 5% level. A chi-square test was employed for comparing among various groups, and a t-test was employed to compare among two groups. A regression test was employed to identify the most independent affecting factors on career adaptability.

Results

Table (1): Newly Graduated Nurses' personal data in Tanta University and Kafrelshiekh Hospitals (n = 175)

Personal Data	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)	
	No	%	No	%
Age (years)				
< 25	75	75.0	70	93.3
≥ 25	25	25.0	5	6.7
Min. – Max.	21.0 – 26.0		21.0 – 26.0	
Mean ± SD.	24.48 ± 1.24		22.91 ± 1.43	
Gender				
Male	12	12.0	10	13.3
Female	88	88.0	65	86.7
Marital status				
Single	35	35.0	47	62.7
Married	65	65.0	28	37.3
Residency				
Rural	71	71.0	55	73.3
Urban	29	29.0	20	26.7
Educational level				
Technical Nursing Institute	39	39.0	36	48.0
Bachelor in Science of Nursing	61	61.0	39	52.0
Intensive Care Unit				
Cardiology ICU	17	17.0	17	22.7
Neurology ICU	19	19.0	8	10.7
Medical ICU	12	12.0	12	16.0
Pediatric ICU	11	11.0	10	13.3
Neonate ICU	19	19.0	4	5.3
Surgery ICU	11	11.0	5	6.7
Anesthesia ICU	11	11.0	19	25.3
Employment period				
< year	19	19.0	30	40.0
≥1 – 2 years	81	81.0	45	60.0

Table (2): Total levels of newly graduated nurses' career adaptability in Tanta University and Kafrelsheikh Hospitals (n = 175)

Career Adapt-Ability	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)		Test of Sig.	P
	No.	%	No.	%		
Low (<60%)	23	23.0	10	13.3	$\chi^2=$ 3.386	0.184
Moderate (60 - <75 %)	40	40.0	29	38.7		
High (≥75%)	37	37.0	36	48.0		
Mean ± SD.	114.9 ± 19.19		119.0 ± 18.73		t= 1.431	0.154

SD: Standard deviation χ^2*: Chi square test*   *t: Student t-test*
*p: p value for comparing between the studied groups   *: Statistically significant at p ≤ 0.05*

Table (3): Levels of newly graduated nurses' career adaptability dimensions in Tanta University and Kafrelsheikh Hospitals (n = 175)

Career Adaptability Dimensions	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)		Test of Sig.	P
	No.	%	No.	%		
1.Concern						
Low (<60%)	36	36.0	25	33.3	$\chi^2=$ 0.760	0.684
Moderate (60 : <75 %)	21	21.0	13	17.3		
High (≥75%)	43	43.0	37	49.3		
2.Control						
Low (<60%)	23	23.0	11	14.7	$\chi^2=$ 3.015	0.221
Moderate (60 : <75 %)	18	18.0	20	26.7		
High (≥75%)	59	59.0	44	58.7		
3.Curiosity						
Low (<60%)	39	39.0	20	26.7	$\chi^2=$ 4.042	0.133
Moderate (60 : <75 %)	21	21.0	14	18.7		
High (≥75%)	40	40.0	41	54.7		
4.Confidence						
Low (<60%)	27	27.0	18	24.0	$\chi^2=$ 0.219	0.896
Moderate (60 : <75 %)	21	21.0	17	22.7		
High (≥75%)	52	52.0	40	53.3		
5.Cooperation						
Low (<60%)	32	32.0	10	13.3	$\chi^2=$ 8.850*	0.012*
Moderate (60 : <75 %)	21	21.0	16	21.3		
High (≥75%)	47	47.0	49	65.3		

SD: **Standard deviation** χ^2: **Chi square test**   **t: Student t-test**
p: p value for comparing between the studied groups   *: Statistically significant at p ≤ 0.05

Table (4): Total levels of newly graduated nurses' professional competence in Tanta University and Kafrelsheikh Hospitals (n = 175)

Professional Competence	Tanta University Main Hospital (n = 100)		Kafr elshiek General Hospital (n = 75)		Test of Sig.	p
	No.	%	No.	%		
Unsatisfactory (<80 %)	48	48.0	35	46.7	$\chi^2=$ 0.031	0.861
Satisfactory (≥ 80%)	52	52.0	40	53.3		
Mean ± SD.	146.4 ± 18.43		148.7 ± 18.08		t= 0.842	0.401

SD: Standard deviation χ^2*: Chi square test*   *t: Student t-test*
*p: p value for comparing between the studied groups   *: Statistically significant at p ≤ 0.05*

Table (5): Levels of newly graduated nurses' professional competence dimensions in Tanta University and Kafrelsheikh Hospitals (n = 175)

Professional Competence Dimensions	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)		Test of Sig.	P
	No.	%	No.	%		
1. Delivered nursing care						
Unsatisfactory (<80 %)	34	34.0	22	29.3	χ^2= 0.429	0.513
Satisfactory (≥ 80%)	66	66.0	53	70.7		
2. Value-centered nursing care						
Unsatisfactory (<80 %)	28	28.0	23	30.7	χ^2= 0.148	0.701
Satisfactory (≥ 80%)	72	72.0	52	69.3		
3. Techno-Medical care						
Unsatisfactory (<80 %)	52	52.0	34	45.3	χ^2= 0.762	0.383
Satisfactory (≥ 80%)	48	48.0	41	54.7		
4. Pedagogy in nursing care						
Unsatisfactory (<80 %)	33	33.0	25	33.3	χ^2= 0.002	0.963
Satisfactory (≥ 80%)	67	67.0	50	66.7		
5. Nursing care administration& documentation						
Unsatisfactory (<80 %)	54	54.0	36	48.0	χ^2= 0.618	0.432
Satisfactory (≥ 80%)	46	46.0	39	52.0		
6. Nursing care innovation, administration & management						
Unsatisfactory (<80 %)	56	56.0	53	70.7	χ^2= 3.925*	0.048*
Satisfactory (≥ 80%)	44	44.0	22	29.3		

SD: Standard deviation χ^2: Chi square test   t: Student t-test
*p: p value for comparing between the studied groups *: Statistically significant at p ≤ 0.05*

Table (6): Total levels of newly graduated nurses' professional development in Tanta University and Kafrelsheikh Hospitals (n = 175)

Professional Development	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)		Test of Sig.	p
	No.	%	No.	%		
Low (<60%)	50	50.0	41	54.7	χ^2= 0.381	0.827
Moderate (60 - <75 %)	26	26.0	18	24.0		
High (≥75%)	24	24.0	16	21.3		
Mean ± SD.	60.33 ± 14.50		60.55 ± 13.97		t= 0.099	0.921

SD: Standard deviation χ^2: Chi square test   t: Student t-test
*p: p value for comparing between the studied groups   *: Statistically significant at p ≤ 0.05*

Table (7): Levels of newly graduated nurses' professional development dimensions in Tanta University and Kafrelsheikh Hospitals (n = 175)

Professional Development Dimensions	Tanta University Main Hospital (n = 100)		Kafrelsheikh General Hospital (n = 75)		Test of Sig.	P
	No.	%	No.	%		
1. Participation in continuing professional education						
Low (<60%)	39	39.0	25	33.3	χ^2= 0.596	0.742
Moderate (60 : <75 %)	29	29.0	24	32.0		
High (≥75%)	32	32.0	26	34.7		
2. Participation in research						
Low (<60%)	79	79.0	51	68.0	χ^2= 10.034*	0.007*
Moderate (60 : <75 %)	4	4.0	14	18.7		
High (≥75%)	17	17.0	10	13.3		
3. Clinical practice development						
Low (<60%)	14	14.0	7	9.3	χ^2=	0.025*

Moderate (60 : <75 %)	16	16.0	25	33.3	7.339*	
High (≥75%)	70	70.0	43	57.3		
4. Participation in organization development						
Low (<60%)	54	54.0	33	44.0	χ^2= 2.717	0.257
Moderate (60 : <75 %)	15	15.0	18	24.0		
High (≥75%)	31	31.0	24	32.0		

SD: Standard deviation χ^2*: Chi square test*   *t: Student t-test*
p: p value for comparing between the studied groups   **: Statistically significant at p ≤ 0.05*

Table (8): Correlation between newly graduated nurses' career adaptability and professional competence and professional development in Tanta University and Kafrelsheikh Hospitals (n= 175)

Variables		Tanta University Main Hospital (n = 100)	Kafrelsheikh General Hospital (n = 75)	Total (n = 175)
Career adaptability vs. Professional competence	r	0.614*	0.807*	0.696*
	p	<0.001*	<0.001*	<0.001*
Career adaptability vs. Professional development	r	0.414*	0.373*	0.395*
	p	<0.001*	<0.001*	<0.001*

r: Pearson coefficient   **: Statistically significant at p ≤ 0.05*

Table (9): Multivariate Linear regression analysis for Career Adaptability

Variables	#Multivariate	
	P	**B (LL – UL 95%C.I)**
Professional Competence	<0.001*	0.679 (0.553 – 0.804)
Professional Development	0.100	0.135 (-0.026 – 0.296

C.I: Confidence interval   *LL: Lower limit*   *UL: Upper Limit*
#: All variables with p<0.05 was included in the multivariate   **: Statistically significant at p ≤ 0.05*

Table (1): Displays newly graduated nurses' personal characteristics in Tanta University and Kafrelsheikh Hospitals. Regarding Tanta Hospital, the majority (88%) of nurses are females. Three-quarters (75%) of them are less than 25 years old, with a mean range of 24.48 ± 1.24. Nearly two thirds (65%) of them are married and 71% of them living in rural areas. A high percentage (61%) of them hold bachelor's degrees in nursing. In terms of length of employment, most of them (81%) worked for 1 to 2 years.

Concerning Kafrelsheikh Hospital, the majority (86.7%) of nurses are females, 93.3% are at age group less than 25 years old, with a mean age of 22.91 ± 1.43. more than half (62.7%) of nurses are single, and 73% of them living in rural areas. Slightly over half (52%) of nurses have bachelor degree in nursing. In terms of employment period, high percent (60%) of them worked for 1-2 years.

Table (2): Shows total levels of newly graduated nurses' career adaptability in Tanta University and Kafrelsheikh Hospitals. Regarding Tanta Hospital, around two-fifths (40% and 37%) of nurses have moderate and high career adaptability levels respectively, while less than one quarter (23%) of them have low level of career adaptability. Concerning Kafrelsheikh Hospital, less than half (48%) of nurses have high career adaptability level, but the minority (13.3%) have low level.

Table (3): Presents levels of newly graduated nurses' career adaptability dimensions in Tanta University and Kafrelsheikh Hospitals. Regarding Tanta Hospital, more than half (59% and 52%) of nurses have high levels regarding control and confidence dimensions, respectively. Also, at Kafrelsheikh Hospital, more than half (58.7 % and 53.3%) of nurses scored highly on the control and confidence dimensions, respectively. Also, it is noted that only a statistically significant difference between Tanta and Kafrelsheikh Hospitals regarding cooperation dimension, where less than half (47.0%) of nurses in Tanta Hospital have a high cooperation level, while nearly two-thirds (65.3%) of nurses have a high level in Kafrelsheikh Hospital at p ≤ 0.05.

Table (4): Demonstrates total levels of newly graduated nurses' professional competence in Tanta University and Kafrelsheikh Hospitals. At both Tanta and Kafrelsheikh Hospitals, more than half (52% and 53.3%) of nurses show a satisfactory level of professional competence, respectively. Also, less than half (48% and 46.7%) of them show unsatisfactory level at both hospitals, respectively.

Table (5): Displays levels of newly graduated nurses' professional competence dimensions in Tanta University and Kafrelsheikh Hospitals. Regarding Tanta Hospital, more than two-thirds (72%, 67%, and 66%) of nurses have satisfactory levels regarding

value-centered nursing care, pedagogy in nursing care, and delivered nursing care dimensions, respectively. Concerning Kafrelsheikh Hospital, 70.7%, 69.3%, and 66.7% of nurses have satisfactory levels regarding delivered nursing care, value-centered nursing care, and pedagogy in nursing care dimensions, respectively. Also, it is shown from the table that around half (54% and 48 %) of nurses at Tanta and Kafrelsheikh Hospitals have unsatisfactory levels of nursing care administration& documentation, respectively.

Table (6): Clarifies total levels of newly graduated nurses' professional development in Tanta University and Kafrelsheikh Hospitals. As clear from the table, around half of nurses (54.7% and 50%) have low professional development levels at Kafrelsheikh and Tanta Hospitals, respectively. Also, only around one quarter (24% and 21.3%) of nurses have a high professional development level at Tanta and Kafrelsheikh Hospitals, respectively.

Table (7): Represents levels of newly graduated nurses' professional development dimensions in Tanta University and Kafrelsheikh Hospitals. As revealed from the table, a statistically significant difference between nurses' participation in research and clinical practice development in both hospitals was found. In Tanta Hospital, more than two-thirds (70%) of nurses have a high clinical practice development level, but more than three-quarters (79%) have a low level regarding participation in research. Concerning Kafrelsheikh Hospital, more than half (57.3%) of nurses have a high clinical practice development level, while 68% have a low level regarding participation in research.

Table (8): Illuminates the correlation between newly graduated nurses' career adaptability and professional competence and professional development in Tanta University and Kafrelsheikh Hospitals. The findings reveal statistically significant positive correlations between newly graduated nurses' career adaptability and professional competence and professional development in both hospitals at $p \leq 0.05$.

Table (9): Displays multivariate linear regression factors affecting career adaptability. Based on the multiple regression analysis to test the direct effect of professional competence and professional development on career adaptability, it is observed that professional competence affecting independently on career adaptability significantly at $p \leq 0.05$, but professional development acts as a confounder factor for both professional competence and career adaptability.

Discussion

For recently graduated nurses, graduation and shifting to nursing career are crucial times that require high degree of competency and adaptability **(Lee et al., 2021; Yurtseven & Dulay, 2022)**. Adaptability to the difficulties and conflicts present in intensive care units is necessary for providing nurse care. The process of adaptation in nursing entails learning and applying the profession's knowledge and beliefs. Adaptation of ICUs' new graduates can assist in smoothly managing their career roles and maintaining balance, which maintain the psychological resources for career advancement and feeling of life meaning **(Chen et al., 2020; Ashrafi & Nobahar, 2023)**.

Newly graduated nurses' career adaptability

According to the study's findings, around two-fifths of newly graduated nurses had moderate career adaptability levels at both Tanta University and Kafr Elsheikh Hospitals. These results might be explained through the fact that intensive care units require a higher number of clinically competent nurses due to increased patients' numbers and care acuity, making work environment is more demanding and stressful for recently graduated nurses. Also, newly graduated nurses would be worrying about their professional future which put a strain on them to succeed and take responsibility for preparation as critical care nurses.

In the same scene, **Mahmoud & Abou Ramadan, (2023) & Salim et al., (2023)** suggested that participants exhibited a moderate degree of career adaptability. Also, **Lee & Lee, (2021)** revealed that new nurses' career adaptability scores were at average. Furthermore, **Kim & Shin, (2020)** demonstrated that nursing students had satisfactory degrees of career adaptability behavior. Conversely, **Ramadan et al., (2023)** discovered that more than three quarters of participants had a high level of overall career adaptability. Also, **Stead et al., (2022)** who estimated the scores of career adaptability at low levels.

The current result exposed that more than half of newly graduated nurses at Tanta and Kafr Elsheikh Hospitals demonstrated a high degree of control dimension. This may be caused by the nature of the ICU work field, which exposes nurses to a variety of experiences and opportunities that influence making decisions on their own and taking responsibility for their actions to deal with work-related challenges and enhance control.

Fang et al., (2024) supported the present finding and indicated that career control had the highest dimension score**.** Also, **Mahmoud & Abou Ramadan, (2023)** reported that career control being the dimension with the highest mean percent. Conversely, **Kondo et al., (2023)** contradicted this result, where found that nurses exhibited a low degree of control dimension. Also, **Elsayed & Abdel-Ghani, (2022)** who discovered that control dimension had the least mean score. Moreover, **Kim & Shin, (2020)**

discovered that research participants' perception of career control did not significantly change.

According to the current findings, more than half of graduated nurses at Tanta and Kafrelsheikh Hospitals demonstrated high confidence levels. This may be due to working in a critical care setting where nurses must be able to confidently administer nursing care, where things can change quickly without warning. Also, frequent immersing in critical thinking skills, resolving professional problems, learning new skills, and making decisions can trigger intensive care nurses self-control and self-efficacy.

The current finding goes in the same line with those**, Elsayed & Abdel-Ghani (2022)** who discovered that confidence dimension had the highest score. Also, **Walden, (2020)** found that newly graduated nurses have the highest confidence levels. But, **Makarem et al., (2019)** contrast with this finding, who discovered a low degree of confidence among nurses. Moreover, **Ortiz, (2016)** discovered that recently graduated nurses had lacked confidence.

The findings mentioned only a statistically significant difference between Tanta and Kafrelsheikh Hospitals regarding cooperation dimension, where less than half of nurses in Tanta Hospital had a high cooperation level. These may be due to ICUs in Tanta Hospital is more challenging environment, it provides care for large number of patients that are most severely ill hospitalized patients that require more frequent monitoring and observation making it difficult for them to communicate and collaborate with each other. In line with these results, **Nobahar et al., (2023); Hatip & Seren, (2021); Soliman & El deep, (2020)** found unsatisfactory team work where more than half of ICU nurses have moderate levels of collaboration.

Newly graduated nurses' professional competence
The research findings implied that more than half of graduated nurses had a satisfactory level of professional competence at both hospitals. This may be explained by the fact that they had finished a one-year internship, which gave them familiarity with the work field and the prerequisite competency. Also, the increased attention of hospitals regarding continuing education and training for newly nurses by offering workshops and training sessions covering the latest advancements in their specialized fields for remaining competitive .

This result was confirmed by **Abu Zeitoun, (2024) & Prendi et al., (2024)** who discovered that the participants had good level of professional competence. Also, **Halabi et al., (2023)** shows that overall competence level among NGNs scored high. Furthermore, **Thabet et al., (2020)** confirmed that the professional competency of newly graduated nurses is essential for ethical, professional, and safe clinical practice. Their future competency is accompanied by

completing the internship year, where they needed to acquire more clinical experience and practice beyond task-related clinical skills. On contrast, **Lee & Lee, (2021)** reported that the new graduates' clinical competency was moderate.

The research findings marked that more than two-thirds of new graduates at the two hospitals had satisfactory levels regarding delivered nursing care, nursing care pedagogies, and value-centered nursing care dimensions. These results could be attributed to graduated nurses' fresh minds nourished by recent curriculums held in the educational nursing program, which incorporated them into various teaching-learning activities, including theoretical courses and practical training, which influenced their practice in the work field.

Along with these results**, Abu Zeitoun, (2024)** discovered that the highest scoring areas were care pedagogies, value based nursing care, and delivering nursing care. Also, **Halabi et al., (2023)** revealed that newly graduates nursing care, value-based nursing care, and care pedagogies competencies areas scored highest. Additionally, **Nilsson et al., (2019)** found that competency categories of value-based nursing care had the highest mean ratings. In disagreement, **Lee & Lee, (2021)** discovered that, out of all the clinical competence subcategories; nurse management has the highest scores.

Findings of the present study showed about half of nurses at both hospitals had unsatisfactory levels of nursing care administration& documentation. This might be as a result of the two hospitals' intense workloads, staffing insufficiency, and complicated patient conditions. Thus, there is not enough time for nurses to record completely the nursing care they provide, which is crucial for ensuring patient care continuity and fostering efficient communication among nurses working at different hours.

This result is constant with **Mansour, (2021)** who revealed that most of nursing interventions were either not or incompletely documented. **Akter et al., (2020)** found that nursing documentation was being inadequate in intensive care which affects all aspects of nursing care. Similarly, **Asmirajanti et al., (2019)** show that the nurses' performance on some nursing activities including documentation were below standard (80%). **Ahmed & Kandeel, (2017); Kandeel & Attia, (2013)** reported poor nursing documentation practice in in Egyptian hospitals.

Newly graduated nurses' professional development
The current finding revealed that around half of nurses at the two hospitals had a low level of professional development. The reason for this could be that graduates may have limited time to participate in professional development programs including participation in continuing professional education,

Participation in research and organization development, especially during regular work hours, and the unique demands and limits of working in critical care units.

This result goes in harmony with **Shinners et al., (2021)** who revealed that new graduates often do not know when to start with professional development. Also, **Gouifrane et al., (2018)** who reported that nurses' participation in continuing education initiatives was low. But, **Kurtovic et al., (2024)** not support the present findings and cleared that level of engagement in professional development activities among participants was average. Furthermore, **Alsubaie et al., (2023); Yu et al., (2022)** who showed that studied subjects had a positive attitude towards continuous professional development.

Study results presented a high percent of nurses had a high level of clinical practice development dimension at Tanta Hospital compared with around half of nurses at Kafrelsheikh Hospital. This may be explained by the more sensitive work environment in Tanta Hospital, where increased numbers, varieties, and acuity of cases which makes new graduates take responsibility for more practice development for keeping up to date and coping. Also, this result may be due to more than one-third of nurses at Kafrelsheikh Hospital had less than one year of experience so, they had limited opportunities for practice development.

In accorance, **Lejonqvist & Kajander-Unkuri, (2021)** found low competence levels during first year of practice that improved to a good level with more professional development activities involvement. Also, professional competence development levels changed with time, according to **Willman, (2020)**.

Correlation between newly graduated nurses' career adaptability and professional competence and professional development in Tanta University and Kafrelsheikh Hospitals

The existing study result clarified that there were statistically significant positive correlations between new graduated nurses' career adaptability and professional competence and professional development at both hospitals. It could be related to the fact that the career adaptability of new graduates characterizes a feeling of curiosity, control, and confidence that is gained through effective application of their professional competencies and engaging in continuing professional development activities. All of these help them to counter uncertainty and fear over their professional futures. In a similar line, **Yuli Riskiyanti et al., (2022)** reported that career adaptability had a positive relationship with career competencies. Also, **Lee &Lee, (2021)** revealed that career adaptability of new nurses was positively correlated with clinical competence.

Ulupinar & Aydogan, (2021) founded that NGNs who are incompetent had more adaptation difficulties in their careers, and achieving professional expectations and satisfaction were at lower levels.

Also, **Farla, et al., (2024)** reported that career adaptability significantly affects adaptive professional development. **Carvalho & Mourão, (2021)** who showed that there were significant and positive correlations between career adaptability and professional development. Moreover, **Mourão & Fernandes, (2020); Ladeira et al., (2019)** stated that career development has operationalized adaptive behaviors including planning, decision-making, and exploration, which are linked to adaptability and would result in positive professional results.

Conclusion

In conclusion, there were statistically significant positive correlations between newly graduated nurses' career adaptability, professional competence, and professional development at Tanta University and Kafrelsheikh General Hospitals. Also, there was no statistically significant difference between the two hospitals regarding newly graduated nurses' career adaptability, professional competence, and professional development.

Recommendations
At the educational facility level
- Provide more support for the nursing students during basic education regarding clinical practice, teamwork, documentation, and research competencies for accomplishing safe transition and career adaptability.
- Conduct graduates' forums that focus on nursing graduates' challenges and overcoming strategies for safe transition.
- Establishing a hotline for new graduates to answer any inquiries or complaints.
- Conduct field visits to new graduates, finding out their weak points and working to strengthen them.
- Conduct workshops and training courses to nursing graduates for continuing professional development and keeping update.

At ICU managerial level
- Nurse Managers need to be aware of the primary elements influencing new graduates' career adaptability.
- Create standardized training plans for new graduates by coordination with the nursing educational facility to reduce their transition shock.
- Facilitate the opportunities for new graduates to grow and develop much professional competence and career adaptability.

- Encourage new graduates to attend meetings, conferences, and workshops sponsored by professional organizations.

At ICU newly graduated nurses level

- Being aware of the great importance of their professional roles in intensive care.
- Being keen to attend meetings, conferences, and workshops held by professional organizations.
- Take advantage of volunteer work and other experiential learning activities that can help them better understand their career goals through exposure to many facets of the nursing career.

Further Researches

- Conduct similar research in different settings for findings generalization.
- Assess the variables influencing career adaptability among new nurses.
- Explore the factors affecting continuing professional development among nurses.
- Assess the relationship between leadership style and career adaptability.

Acknowledgment

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