Effect of Educational Program about Clinical Judgment Abilities on Intensive Care Nurses' Managerial Skills Acquisition

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Abstract

Background: Clinical judgment abilities are the foundation of quality nursing care in intensive care units. Nurses make multitude of clinical decisions daily. Acquired managerial skills can help the nurses' progression. **Aim:** To determine the effect of educational program about clinical judgment abilities on IC nurses' managerial skills acquisition in intensive care units. **Methods:** the subject included 117 IC nurses who worked at Tanta University Main Hospital. **Tools:** Three tools were used to collect data: **I**C nurses' clinical judgment and skill acquisition knowledge questionnaire, **I**C nurses' clinical judgment abilities self-report and **I**C nurses' managerial skills acquisition self-report. **Results:** preprogram, none of IC nurses had a high level of overall knowledge about clinical judgment abilities and managerial skills acquisition that improved post program to 94.9%. Preprogram, 10.3% and 8.5% of IC nurses had high levels of clinical judgment abilities and managerial skills acquisition practices while post program, majority (93.2% & 93.2%) of them had high levels of clinical judgment abilities and managerial skills acquisition practices with slightly decreased (88% & 81.2%) after 3 months. **Conclusion:** Implementing the educational program about clinical judgment abilities and managerial skills acquisition improved IC nurses' knowledge and practices with a statistically significant positive correlation was detected between nurses' knowledge about clinical judgment abilities and managerial skill acquisition and its practices. **Recommendation:** Establish periodic pre-service orientation program for IC nurses about clinical judgment to improve their practices regarding managerial skills. ***Keywords:*** Clinical judgment, Intensive care unit, Managerial skill acquisition, Nurses

Introduction

Intensive Care Units (ICUs) have crucial assets of hospitals which offer specialist treatment to patients in severe condition **(Jessee, 2021).** IC nurses need a solid background in knowledge, technical skills, and professional judgment to effectively manage critical cases **(Ali-Abadi, Babamohamadi & Nobahar, 2020).** This requires a combination of clinical judgment, clinical reasoning, and critical thinking **(Lighthall & Vazquez-Guillamet, 2015).**

Clinical judgment refers to the mental process of coming to a conclusion or formulating an opinion, frequently following extensive deliberation **(Ibrahim, Boerhannoeddin, & Bakare, 2017)**. IC nurses use their acquired knowledge and skills to evaluate patient data, synthesize information, and make well-informed judgments that result in appropriate, evidence-based practices, in which they are demonstrating clinical judgment abilities. It affects the safety of patients and the standard of care that forms the basis of the healthcare system (**Anand, Mishra, Beri, & Chaudhary, 2024).** Clinical judgment abilities have four dimensions which are noticing, interpreting, responding and reflecting dimensions that can be affected by cognitive, psychomotor and affective domains **(Anand, Mishra, Beri & Chaudhary, 2024).** Noticing is the process of identifying significant elements of the scene in order to gain a perceptual grasp. Interpreting is the process of comprehending a situation well enough to react. Responding entails choosing a course of action to create a care plan. Reflecting involves paying attention to the reactions of the patients and their family **(Condren, 2025).**

Clinical judgment can affect skill acquisition **(Larsson, Aronsson, Norén, & Wallin, 2022).** IC nurses must continuously develop their managerial and competency skills. One of the main goals of nursing care training is the acquisition of managerial abilities. The capacity of the nurse to carry out a task result in a particular predetermined outcome has been referred to as skill in a variety of roles. There are several dimensions of managerial skills which IC nurses need to possess as problem solving, communication, cooperation, and critical thinking skills **(Alsadaan et al., 2023).**

Nurses have a crucial obligation to use and continuously improve their problem-solving skills **(Li & Luo,**

2022). Working on teams with other nurses and colleagues from different specialties requires effective communication skills **(Leonard et al., 2022).**

Improving the nurses' capacity to apply cooperation and perpetual learning abilities is crucial to enhancing their capacity to achieve the goals Critical thinking enables nurses to address issues and exercise clinical judgment **(Ortega-Lapiedra, Barrado-Narvión & Bernués-Oliván 2023).**

Significance of the study:

Therefore, implementing educational programs on clinical judgment abilities can assist IC nurses at Tanta Main University Hospitals to improve their performance and managerial skills.

Aim of the study; the study aimed to determine the effect of educational program about clinical judgment abilities on intensive care nurses' managerial skills acquisition.

Research hypotheses:

After implementation of the educational program intensive care nurses' knowledge and practice about clinical judgment abilities and managerial skill acquisition were expected to be improved.

Subjects and method: Study design: Quasi-experimental research design was used to achieve the aim of the present research.

Setting

The present study was conducted in all Intensive Care Units at Tanta University Main Hospitals.

Subjects

The subjects of this study consisted of all (N= 117), IC nurses from Neuropsychiatric (32 nurses), Cardiac (70 nurses) and Oncological ICUs (15 nurses).

Tools

To achieve the aim of the present study three tools were used:

Tool I: Intensive Care Nurses' Clinical Judgment and Skill Acquisition Knowledge Questionnaire this tool included two parts as follow:

Part 1: Intensive care nurses' personal and work related data included age, gender, department, level of education, years of experiences, position and attendance of any previous programs about clinical judgment.

Part 2: Intensive Care Nurses' Clinical Judgment Abilities and Managerial Skills Acquisition Knowledge Questionnaire:

This tool was developed by the researcher guided by **(Benner, 2018), (Manetti, 2019)** and **(Standing, 2020)**, **(Jessee, 2021).** It was used to assess intensive care

nurses' knowledge about clinical judgment abilities and managerial skills acquisition. These questions were classified into 5 categories that consisted of 40 questions which cover the following dimensions: -

-Definition of clinical judgment, skill acquisition and its impact on patient safety outcome.

-Dreyfus model of skill acquisition and skills required to enhance practice.

-Strategies of clinical judgment.

-Application on models of clinical judgment.

-Application of managerial skill acquisition on clinical judgment process.

Scoring system:

Each question of the test took score of one for correct answer and zero for wrong answer. The total scores were calculated and classified into levels according to cut-off points as follow:

-High knowledge ≥80%

-Moderate knowledge 60 - < 80%

-Low knowledge < 60%

Tool II: Intensive Care Nurses' Clinical Judgment Abilities Self Report:

This tool was developed by the researcher guided by **(Mann, 2018), (Benner, 201^), (Manetti, 2019)**, **(Standing, 2020)** and **(Lee, 2021).** It was used to assess the clinical judgment abilities of intensive care nurses' practice: that included; noticing (11 items), interpreting (12 items), responding (12 items) and reflecting (11 items) dimensions that contain cognitive, psychomotor, affective domain.

Scoring system:

Intensive care nurses' responses were measured on a three points Likert Scale namely Always done= 3, Sometimes done= 2 Not done= 1. The total scores were calculated by summing of all categories and classified into levels according to cut-off points as follow:

-High clinical judgment ability ≥75%

-Moderate clinical judgment ability 60- < 75%

-Low clinical judgment ability < 60%

Tool III: Intensive Care Nurses' Managerial Skills Acquisition Self Report

This tool was developed by the researcher guided by **(Williams, 2015), (Sibiya, 2018), (Benner, 2018), (Supriyatno, Susilawati, & Hassan. 2020)** and **(Seada, Etway, & El-Shafay, 2022)**. It was used to assess managerial skills acquisition of intensive care nurses' practice. It included four dimensions: Problem solving (8 items), communication skill (11 items), cooperation skill (12

items), and critical thinking skill (15 items).

Scoring system:

Intensive care nurses' responses were measured on a three points Likert Scale namely Always done= 3, Sometimes done= 2 Not done= 1. The total scores were calculated by summing of all categories and classified into levels according to cut-off points as follow:

- High managerial skill ≥ 75 %
- Moderate managerial skill 60- < 75%
- Low managerial skill < 60%

Method

1-Official permission to conduct the study was obtained from responsible authorities to enable the researcher to collect data.

2-Ethical consideration:

Approval from the Scientific Research Ethical Committee at Faculty of Nursing was obtained (Code. No: 216/ 3 / 2023).

3-Tools were submitted to a jury of nine experts for testing the content validity**.**

4-The experts' responses were represented in four points rating scale ranged from 4= strongly relevant 3= relevant 2= little relevant 1= not relevant. Necessary modifications were done including clarification and simplifying work related words. The content validity for tool (I) was 99.8% and for tool (II) was 97.66% and for tool (III) was 99.05%**.**

5-Apilot study was conducted on a sample 10% (n=12) intensive care nurses in Neuropsychiatric center at Tanta University Hospitals randomly selected to test the clarity and applicability then needed correction were done. It was conducted two times to the same intensive care nurses two weeks interval (test- retest) to assess the reliability of the tools. The pilot nurses weren't included in the study subjects.

6-Reliability of tools was tested using Cronbach' Alpha Coefficient Factor, its value for tool I was 0.732 and for tool II was 0.892 for tool III was 0.935.

7-Data collection phase:

-Tool (I, II, III) was distributed by researcher on the intensive care nurses in their work setting.

-The approximate time for data collection was according to type of work and work load for each department. The data collection started from the beginning of January 2024 and to the end of June.

-The educational program was conducted in four phases; assessment, development of educational program, implementation of the educational

program and finally evaluation phases.

Results

Table (1) shows intensive care nurses' personal and work related data. The table showed that the intensive care nurses aged from 21-50 years with mean 28.69 ± 6.00. More than three fifth (60.7%) of them aged 25 -<35 years. Majority (80.3%) of IC nurses were female. More than half (59.8%) of them were working in Cardiac ICU. More than half (50.4%) of them had associated nursing degree. More than half (51.3%) of them, their experience were less than 5 years with mean 6.44 ± 6.03 years of experience. Majority (94.9%) of them were staff nurses. All (100%) of IC nurses didn't attend any training program about clinical judgment.

Figure (1) illustrates that preprogram, none (0%) of IC nurses had high level of overall knowledge about judgment abilities and managerial skills acquisition, but post program the majority (94.9%) of them had high level of knowledge.

Table (2) illustrates mean score, standard deviation and ranking of intensive care nurses' knowledge about clinical judgment abilities and managerial skill acquisition. The table demonstrated that there were statically significant differences between all intensive care nurses' knowledge about clinical judgment abilities and managerial skill acquisition <0.001*. The total score increased significantly from 10.07 ± 2.78 preprogram to 35.66 ± 2.29 post program. Specifically, it was observed that preprogram, the highest mean score was 2.66 ± 1.18 for application of managerial skill acquisition on clinical judgment process followed by 2.09 ± 1.45 for application on models of clinical judgment while, the lowest mean score was 1.50 ± 1.04 for strategies of clinical judgment.

Figure (2) showed that in preprogram, around one-tenth (10.3%) of IC nurses had high level of clinical judgment abilities. Post program, vast majority (93.2%) of them had high level of clinical judgment abilities, which slightly decreased after 3 months post program to majority (88%) of them.

Table (3) illustrates mean score, standard deviation and ranking of intensive care nurses' clinical judgment abilities pre, post and after three months. The table revealed that there were statically significant differences between all intensive care nurses' clinical judgment abilities <0.001*. The total score

increased significantly from 81.69 ± 26.0 preprogram to 135.63 ± 9.77 post program, and slightly decreased to 132.77 ± 10.86 after three months.

Figure (3) illustrated that at preprogram only less than one-tenth (8.5%) of IC nurses had high level of managerial skill acquisition. While post program, vast majority (93.2%) of them had high level of managerial skill acquisition which 3 months post program it slightly decreased to 81.2% of them had high level of managerial skill.

Table (4) demonstrates the distribution of IC nurses according to levels for their clinical judgment abilities. The table showed that at preprogram less than one tenth (23.9%, 11.1% and 7.7%) of IC nurses had high level of affective, psychomotor and cognitive abilities regarding clinical judgment, respectively. while post program, majority (92.3%, 96.6% and 95.7%) of them had high level of affective, psychomotor and cognitive abilities regarding clinical judgment, respectively. But after three months, it changed to be 91.5%, 100% and 90.6% of them had high level of affective, psychomotor and cognitive abilities regarding clinical judgment, respectively.

Figure (4) revealed that post program, there was statistically significant positive correlation between IC nurses' knowledge and their clinical judgment abilities (at r= 0.232).

Table (5) shows mean score, standard deviation and ranking of intensive care nurses' managerial skills acquisition. The table illustrated that there were statically significant differences between all intensive care nurses' managerial skill acquisition <0.001*. The total score increased significantly from 76.50 ± 28.81 preprogram to 131.71 ± 8.65 post program, and slightly decreased to 115.89 ± 8.43 after three months.

Figure (5) revealed that post program, there was statistically significant positive correlation between IC nurses' knowledge and their managerial skills acquisition (at r= 0.274).

Figure (6) revealed that there was a statistically significant positive correlation between IC nurses' clinical judgment abilities and their managerial skills acquisition post program and after 3 months at (r=527, and 0.227) respectively.

Table (1) :Intensive care nurses' personal and work related data (N =117)

IC nurses' personal and work related data	No.	%
Age (years)		
<25	28	23.9
25–<35	71	**60.7**
35–<45	15	12.8
≥45	3	2.6
Min. – Max.	21.0 – 50.0	
Mean ± SD.	28.69 ± 6.0	
Gender		
Male	23	19.7
Female	94	**80.3**
Department		
Neuropsychiatric ICU	32	27.4
Cardiac ICU	70	**59.8**
Oncology ICU	15	12.8
Level of education		
Bachelor in Nursing	58	49.6
Associated Nursing Degree	59	**50.4**
Years of experience		
<5	60	**51.3**
5-<10	34	29.1
10-<15	10	8.5
≥15	13	11.1
Min. – Max.	0.0 – 30.0	
Mean ± SD.	6.44 ± 6.03	
Position		
Head nurse	6	5.1
Staff nurse	111	**94.9**
Attending training program about clinical judgment		
No	117	**100.0**

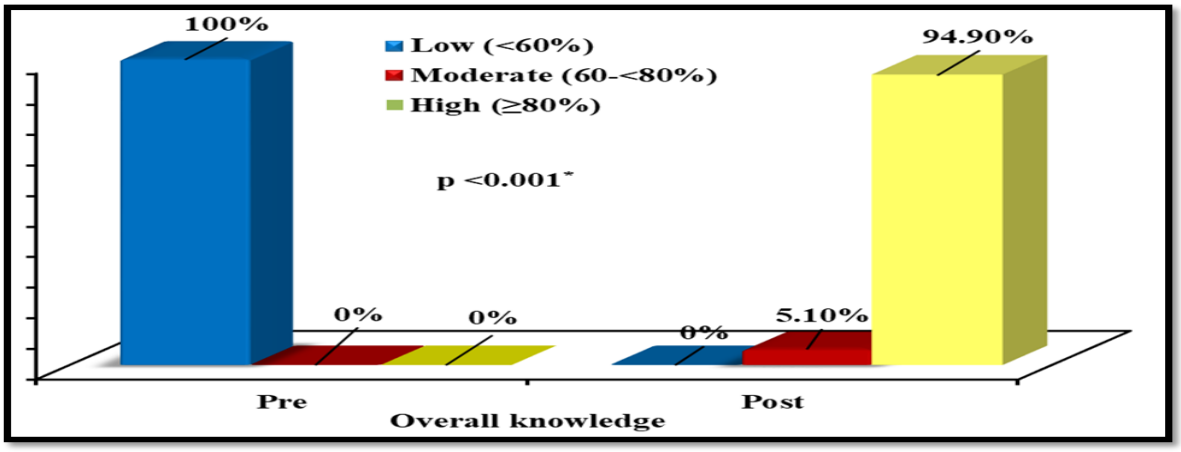

Figure (1): Levels of intensive care nurses' overall knowledge about clinical judgment abilities and managerial skills acquisition pre and immediate post program

Table (2): Mean score, standard deviation and ranking of intensive care nurses' knowledge about clinical judgment abilities and managerial skill acquisition dimension (N=117)

Intensive care nurses' knowledge about clinical judgment abilities and managerial skill acquisition	Pre	Ranking	Post	Ranking	T	P
Definitions of clinical judgment, skill acquisition and its impact on patient safety outcome						
Total score (0–8)						
Min. – Max.	0.0 – 5.0		5.0 – 8.0			
Mean ± SD.	1.86 ± 1.22	23.25	7.10 ± 0.74	88.75	44.839*	<0.001*
Average Score (0–1) (Mean ± SD.)	0.23 ± 0.15		0.89 ± 0.09			
Dreyfus model of skill acquisition and skills required to enhance practice						
Total score (0–8)						
Min. – Max.	0.0 – 6.0		5.0 – 8.0			
Mean ± SD.	1.96 ± 1.35	24.5	7.03 ± 0.88	87.87	33.351*	<0.001*
Average Score (0–1) (Mean ± SD.)	0.24 ± 0.17		0.88 ± 0 .11			
Strategies of clinical judgment						
Total score (0–8)						
Min. – Max.	0.0 – 4.0		5.0 – 8.0			
Mean ± SD.	**1.50 ± 1.04**	**18.75**	**7.26 ± 0.83**	**90.75**	43.638*	<0.001*
Average Score (0–1) (Mean ± SD.)	0.19 ± 0.13		0.91 ± 0.10			
Application on models of clinical judgment						
Total score (0–8)						
Min. – Max.	0.0 – 5.0		3.0 – 8.0			
Mean ± SD.	**2.09 ± 1.45**	**26.12**	**6.92 ± 1.23**	**85.5**	25.888*	<0.001*
Average Score (0–1) (Mean ± SD.)	0.26 ± 0.18		0.87 ± 0.15			
Application of managerial skill acquisition on clinical judgment process						
Total score (0–8)						
Min. – Max.	0.0 – 5.0		5.0 – 8.0			
Mean ± SD.	**2.66 ± 1.18**	**33.25**	**7.35 ± 0.87**	**91.88**	33.713*	<0.001*
Average Score (0–1) (Mean ± SD.)	0.33 ± 0.15		0.92 ± 0.11			
Overall knowledge						
Total score (0–40)						
Min. – Max.	**3.0 – 20.0**		**28.0 – 40.0**			
Mean ± SD.	**10.07 ± 2.78**	**25.18**	**35.66 ± 2.29**	**89.15**	74.061*	<0.001*
Average Score (0–1) (Mean ± SD.)	**0.25 ± 0.07**		**0.89 ± 0.06**			

t: Paired t-test p: p value for comparing between **pre and post**

*: Statistically significant at $p \leq 0.05$

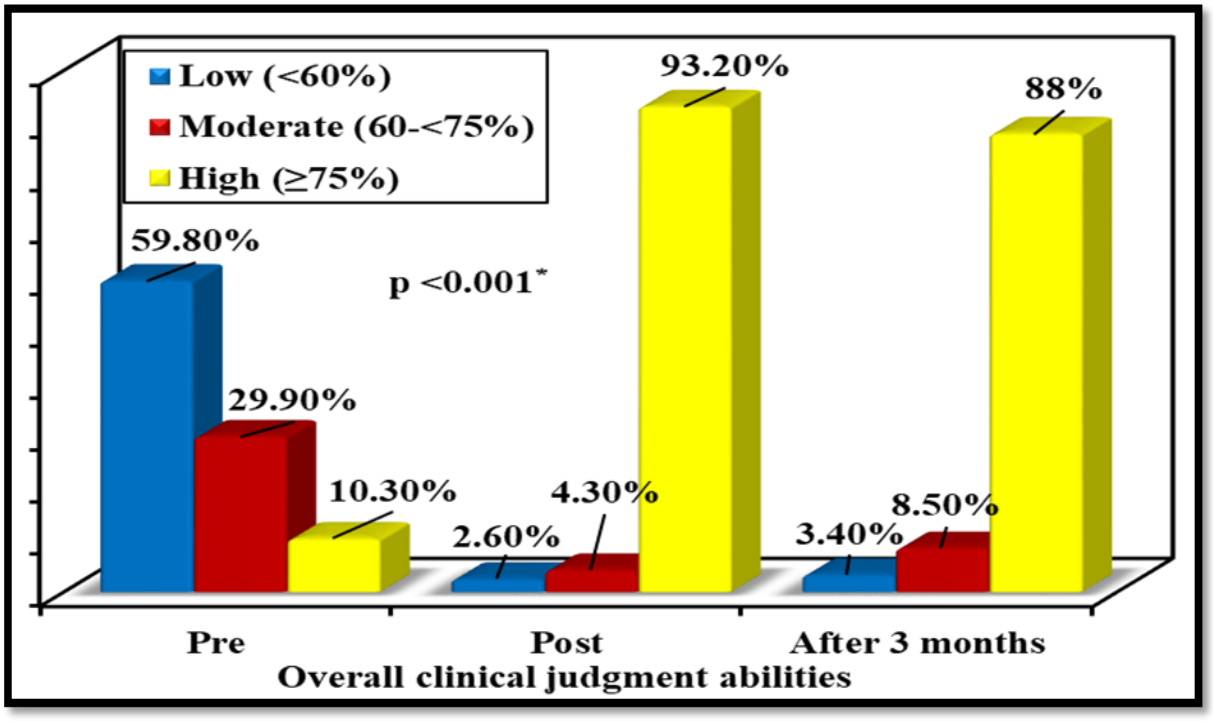

Figure (2): Levels of intensive care nurses' overall clinical judgment abilities pre, post and 3 months post program

Table (3): Mean score, standard deviation and ranking of intensive care nurses' clinical judgment abilities (N=117)

Intensive Care Nurses' Clinical Judgment Abilities	Pre	Ranking	Post	Ranking	After 3 months	Ranking	F	p
I: Noticing Total score (11–33) Min. – Max. Mean ± SD.	11.0 – 32.0 18.97 ± 8.68	57.58	12.0 – 33.0 30.98 ± 4.24	**93.88**	12.0 – 33.0 30.58 ± 4.85	**92.67**	187.786*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.72 ± 0.79		2.82 ± 0.39		2.78 ± 0.44			
II: Interpreting Total score (13–39) Min. – Max. Mean ± SD.	15.0 – 35.0 20.91 ± 7.77	**53.62**	16.0 – 39.0 38.32 ± 3.30	**98.26**	16.0 – 39.0 37.33 ± 4.71	**95.72**	393.201*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.61 ± 0.60		2.95 ± 0.25		2.87 ± 0.36			
III: Responding Total score (12–36) Min. – Max. Mean ± SD.	14.0 – 33.0 20.46 ± 7.14	**56.83**	25.0 – 36.0 34.55 ± 3.30	95.97	25.0 – 36.0 33.79 ± 4.07	93.86	359.957*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.71 ± 0.59		2.88 ± 0.27		2.82 ± 0.34			
IV: Reflecting Total score (11–33) Min. – Max. Mean ± SD.	11.0 – 32.0 19.03 ± 7.96	**57.67**	18.0 – 33.0 31.80 ± 3.15	**96.36**	13.0 – 33.0 31.07 ± 3.90	**94.15**	254.187*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.73 ± 0.72		2.89 ± 0.29		2.82 ± 0.35			
Overall Total score (47–141) Min. – Max. Mean ± SD.	**51.0 – 132.0 81.69 ± 26.0**	**57.94**	**78.0 – 141.0 135.63 ± 9.77**	**96.19**	**96.0 – 141.0 132.77 ± 10.86**	**94.16**	457.647*	<0.001*
Average Score (1–3) (Mean ± SD.)	**1.74 ± 0.55**		**2.89 ± 0.21**		**2.82 ± 0.23**			

F: F test (ANOVA) with repeated measures

p: p value for comparing between **the studied periods**

*: Statistically significant at $p \leq 0.05$

Table (4): Distribution of studied nurses according to levels of clinical judgment abilities pre, post and after 3 months of the program (N=117)

Overall intensive care nurses' clinical judgment abilities	Pre		Post		After 3 months		Fr.	P
	No	%	No	%	No	%		
Cognitive domain								
Low (<60%)	94	80.3	1	.9	2	1.7		
Moderate (60-<75%)	14	12.0	4	3.4	9	7.7	199.684*	<0.001*
High (≥75%)	9	7.7	112	95.7	106	90.6		
Psychomotor domain								
Low (<60%)	83	70.9	1	0.9	0	0.0		
Moderate (60-<75%)	21	17.9	3	2.6	0	0.0	204.171	<0.001*
High (≥75%)	13	11.1	113	96.6	117	100.0		
Affective domain								
Low (<60%)	72	61.5	5	4.3	4	3.4		
Moderate (60-<75%)	17	14.5	4	3.4	6	5.1	149.220	<0.001*
High (≥75%)	28	23.9	108	92.3	107	91.5		

Fr: **Friedman test**

p: p value for comparing between **the studied periods**

*: Statistically significant at p ≤ 0.05

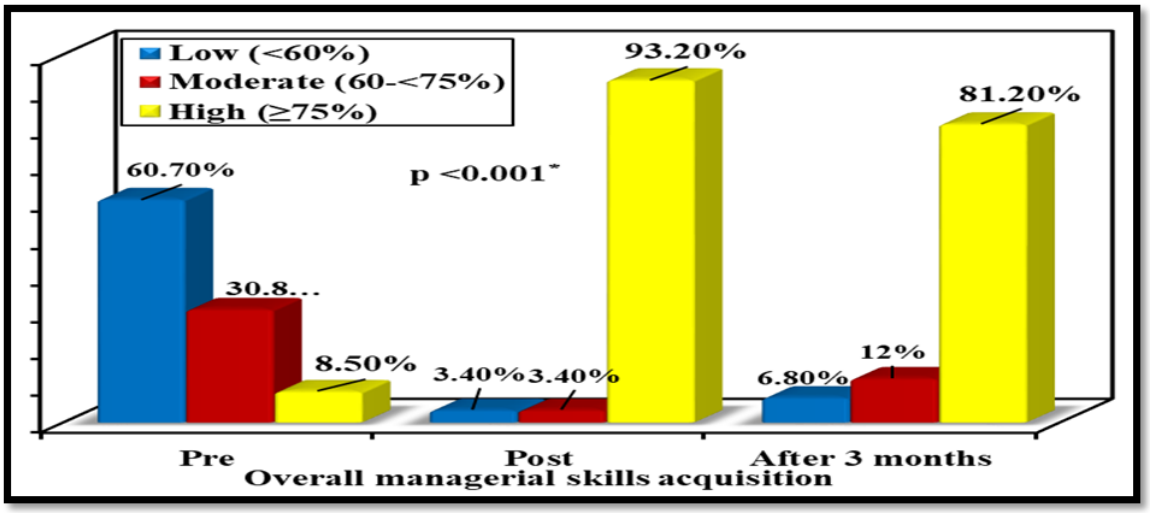

Figure (3): Levels for intensive care nurses' overall managerial skills acquisition pre, post and 3 months post program

Table (5): Mean score, standard deviation and ranking of intensive care nurses' managerial skills acquisition (N=117)

Intensive Care Nurses' Managerial Skills Acquisition	Pre	Ranking	Post	Ranking	After 3 months	Ranking	F	P
Problem solving skills Total score (8–24)								
Min. – Max.	8.0 – 21.0		16.0 – 24.0		13.0 – 24.0			
Mean ± SD.	**13.44 ± 5.61**	**56**	**22.56 ± 2.01**	**94**	**20.16 ± 2.12**	84	200.933*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.68 ± 0.70		2.82 ± 0.25		2.52 ± 0.26			
Communication skills Total score (11–33)								
Min. – Max.	11.0 – 28.0		19.0 – 33.0		18.0 – 33.0			
Mean ± SD.	18.94 ± 7.42	**57.39**	31.67 ± 3.23	**95.97**	27.85 ± 2.62	**84.39**	204.370*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.72 ± 0.67		2.88 ± 0.29		2.53 ± 0.24			
Cooperation skills Total score (12–36)								
Min. – Max.	13.0 – 34.0		25.0 – 36.0		23.0 – 36.0			
Mean ± SD.	**19.58 ± 7.50**	**54.39**	**33.98 ± 2.66**	94.39	**29.75 ± 2.53**	**82.64**	282.372*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.63 ± 0.63		2.83 ± 0.22		2.48 ± 0.21			
Critical thinking skills Total score (15–45)								
Min. – Max.	15.0 – 44.0		24.0 – 45.0		30.0 – 45.0			
Mean ± SD.	**24.50 ± 10.23**	54.44	**43.50 ± 3.85**	**96.67**	**38.12 ± 2.93**	**84.71**	257.318*	<0.001*
Average Score (1–3) (Mean ± SD.)	1.63 ± 0.68		2.90 ± 0.26		2.54 ± 0.20			
Overall Total score (46–138)								
Min. – Max.	**47.0 – 125.0**		**99.0 –138.0**		**89.0 – 138.0**			
Mean ± SD.	**76.50 ± 28.81**	**55.43**	**131.71 ± 8.65**	**95.44**	**115.89 ± 8.43**	**83.98**	293.491*	<0.001*
Average Score (1–3) (Mean ± SD.)	**1.66 ± 0.63**		**2.86 ± 0.19**		**2.52 ± 0.18**			

F: F test (ANOVA) with repeated measures

p: p value for comparing between **the studied periods**

*: Statistically significant at $p \leq 0.05$

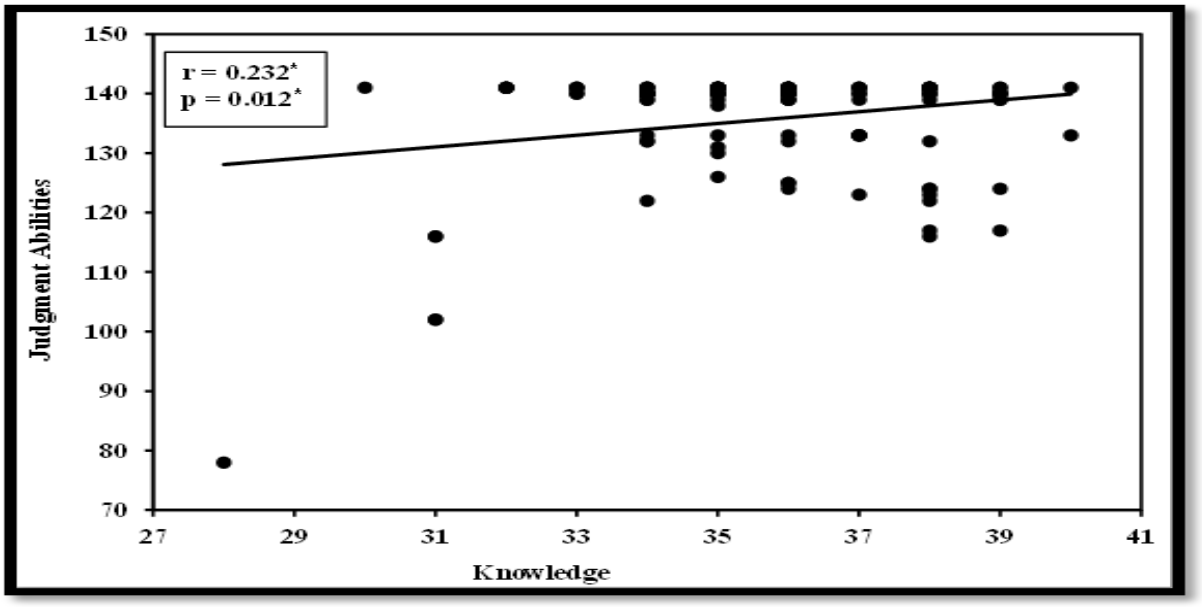

Figure (4): Correlation between IC nurses' knowledge about clinical judgment abilities and managerial skills acquisition and their clinical judgment abilities

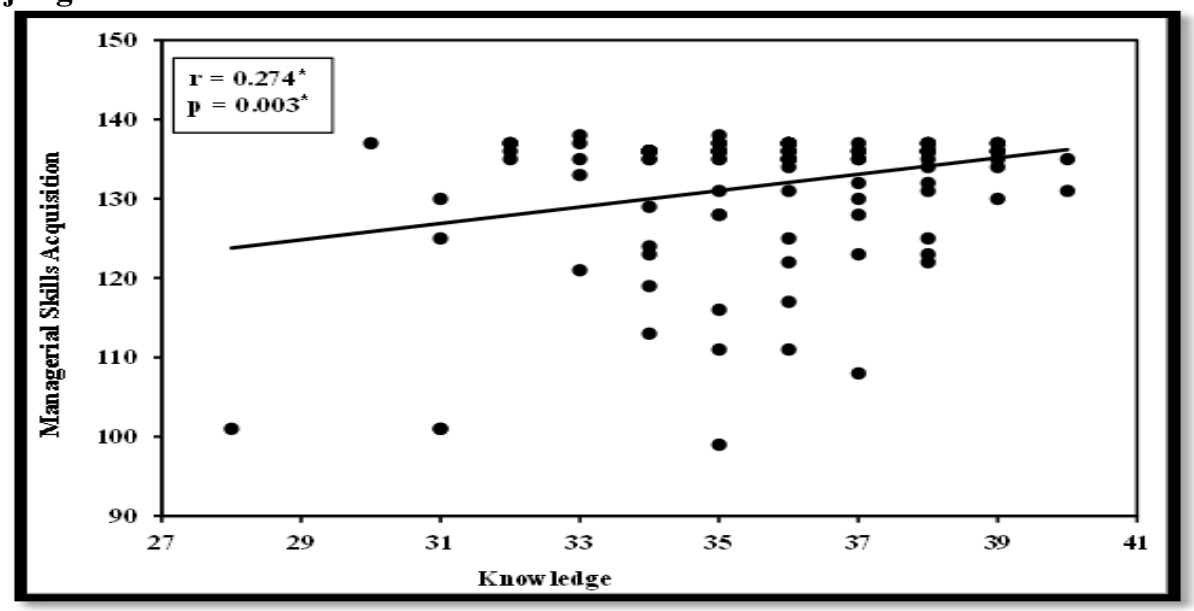

Figure (5): Correlation between IC nurses' knowledge about clinical judgment abilities and managerial skills acquisition and their managerial skills acquisition

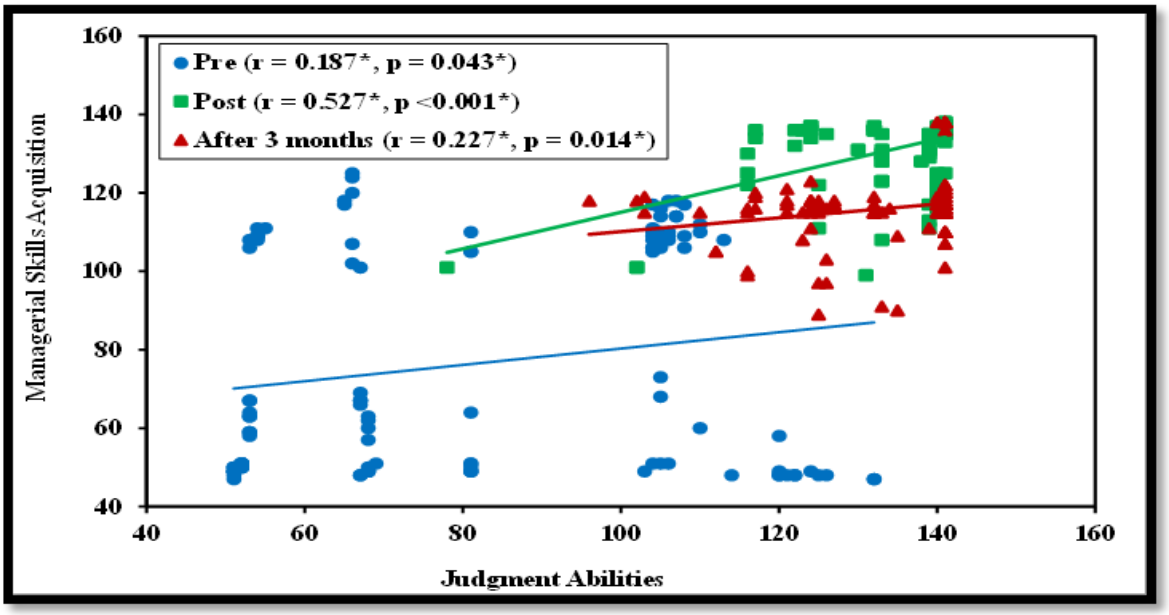

Figure (6): Correlation between IC nurses' clinical judgment abilities and their managerial skills acquisition

Discussion

The present study illustrated that at preprogram, none of IC nurses had high level of overall knowledge **about judgment abilities and** managerial skills acquisition and all its dimensions. This may be due to all of IC nurses didn't attend any previous training about clinical judgment. In addition, there was lack of institutional support, mentoring and lack of resources dedicated to educating nurses about clinical judgment. While post program, it enhanced to be majority of them had high level of knowledge about judgment abilities and managerial skills acquisition and all its dimensions.

These results are in the same line with **Seidi, Alhani & Salsali (2015)** who displayed that clinical judgment development is necessary because it led to appropriate nursing diagnoses, clinical judgment, health promotion and critical thinking.

Preprogram, around one-tenth of IC nurses had high level of clinical judgment abilities. This may be due to low percent only of IC nurses had the abilities to make accurate noticing, interpreting, responding

and reflecting that enhance the clinical judgment practices. However, post program, vast majority of IC nurses had high level of clinical judgment abilities, which slightly decreased after 3 months post program. As well, A statistically significant improvement of mean score for intensive care nurses' clinical judgment abilities was detected the total mean score increased significantly from preprogram to post program and slightly decreased after three months. This indicated that the current educational program assisted IC nurses to improve their clinical judgment abilities.

The present study is supported by the study of **Klenke-Borgmann, Cantrell & Mariani (2021)** who found that there was statistically significant improvement between the mean scores for nurse role to make accurate clinical judgment after implementing the educational program. However, the current study is incongruent with **Edrees, Hamdy & Abd Elazeem (2024)** clarified that at Tanta University Main Hospital, roughly seventy percent of nurses possessed clinical judgment that was satisfactory.

The present study demonstrated that at preprogram, less than one tenth of IC nurses had high levels of affective, psychomotor and cognitive abilities regarding clinical judgment. This may be due to nursing shortage, insufficient experience and educational program that led to minimal percent of IC nurses displayed their nursing skills according to cognitive, psychomotor and affective practices. While changed at post program and three months post program to be majority of them had high level of affective and cognitive abilities regarding clinical judgment. Moreover, their psychomotor skills enhanced after three months of the educational program to be all of them due to acquisition of professional skills and more experience. As well, majority of them had correct answer in items regarding cognitive, psychomotor and affective processes after implementation of the educational program. The current study is agreed with **Sabei & Lasater (2016)** who found that nurses after an educational intervention, actively evaluate their psychomotor, affective, and cognitive performance in relation to their clinical judgment ability.

The result of the present study illustrated that at preprogram only less than one-tenth of IC nurses had high level of managerial skill acquisition. This may be due to there were insufficient training program regarding managerial skills

acquisition to solve problems, think critically, and make decisions. While post program, vast majority of them had high level of managerial skill acquisition which 3 months post program it slightly decreased. The present study is in the same line with the study of **Zaki, Mostafa & Ahmed (2020)** who found that the ability of nurses to solve problems, think critically, and make decisions in the healthcare industry is a function of their educational background.

The findings of the current study revealed that post program, there was statistically significant positive correlation between overall knowledge and clinical judgment abilities and managerial skills acquisition. This may be due to the educational program enhanced IC nurses' knowledge and practicesegarding clinical judgment abilities and managerial skill acquisition and the IC present became more qualified to acquire more skills. The present study is congruent with the study of **Jessee (2021)** who mentioned that improving the patient safety system required putting clinical judgment education and training into practice, as well as understanding the consequences of using poor clinical judgment.

The result of the present study revealed that there was statistically significant positive correlation between IC nurses' clinical judgment abilities and their managerial skills acquisition post program and after 3 months. This may be due to that improving IC nurses' clinical judgment abilities led to enhance their managerial skills acquisition.

The present study is coherent with the study of **Ibrahim, Boerhannoeddin & Bakare (2017)** who found that managerial skills increased the ability regarding clinical judgment of nurses after they received training.

Conclusion

Based on the findings of the present study, it can be concluded that educational programs have greater effect on IC nurses' knowledge and practices regarding clinical judgment abilities and managerial skill acquisition throughout post and follow up phases (after three months) of the program compared with the preprogram phase. In addition, a statistically significant positive correlation was detected between nurses' knowledge about clinical judgment abilities and managerial skill acquisition and its practices.

Recommendations

1. Establish pre-service orientation program for IC nurses about clinical

judgment to improve their practices regarding managerial skills.

2. Establish clear policies to document evidence-based practices for nurses.
3. Foster a hospital culture through establishing periodic meetings that helps to engage nurses in hospital policies.
4. Organize frequent workshops and seminars to educate nurses about clinical judgment and its impact on patient safety.
5. Reorient IC nurses to job descriptions that make duties and responsibilities clear in order to improve communication and cooperation.
6. Follow established clinical judgment protocols and policies.
7. Engage in training to update and improve practices regarding Establish partnership with hospitals to provide more training regarding clinical judgment abilities and managerial skill acquisition during clinical rotation.
8. Offer post-graduate courses or certifications focused on clinical judgment abilities and managerial skill acquisition in critical care setting.

References

Ali-Abadi, T., Babamohamadi, H., & Nobahar, M. (2020). Critical thinking skills in intensive care and medical-surgical nurses and their explaining factors. *Nurse education in practice,* 45, 102783.

Alsadaan, N., Salameh, B., Reshia, F., Alruwaili, R., Alruwaili, M., Awad Ali, S., & Jones, L. (2023). Impact of nurse leaders behaviors on nursing staff performance: a systematic review of literature. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *60*, 00469580231178528.

Anand, B., Mishra, I., Beri, G., & Chaudhary, K. (2024). Types of learning: Domains of learning–Cognitive, affective, and psychomotor, learning theories, experiential learning. *Extension methods, ICT and educational technology*, 53-82.

Benner, P. (2018). Skill acquisition and clinical judgment in nursing practice: towards expertise and practical wisdom. In *Practice wisdom* (pp. 225-240). Brill.

Condren, T. (2025). Clinical Judgment Development through Model-Based Reflection in Clinical Nursing Education. *Nursing Education Perspectives*, 10-1097.

Edrees, A., Hamdy Abou Ramadan, A., & Abd Elazeem Saber Seleem, E. (2024). Nurses' Attitudes toward Patient Safety and Its Relation to

Clinical Judgment and Resilience. *Egyptian Journal of Health Care*, *15*(3), 897-912.

Ibrahim, R., Boerhannoeddin, A., & Bakare, K. (2017). The effect of soft skills and training methodology on employee performance. *European Journal of Training and Development*, *41*(4), 388-406.

Jessee, M. (2021). An update on clinical judgment in nursing and implications for education, practice, and regulation. *Journal of Nursing Regulation*, *12*(3), 50-60.

Klenke-Borgmann, L., Cantrell, M. & Mariani, B. (2020). Nurse educators' guide to clinical judgment: A review of conceptualization, measurement, and development. *Nursing Education Perspectives*, *41*(4), 215-221.

Larsson, M., Aronsson, A., Norén, K., & Wallin, E. (2022). Healthcare workers' structured daily reflection on patient safety, workload and work environment in intensive care. A descriptive retrospective study. *Intensive and Critical Care N ursing*, *68*, 103122.

Lee, K. (2021). The Lasater Clinical Judgment Rubric: implications for evaluating teaching effectiveness. *Journal of Nursing Education, 60*(2), 67-73.

Leonard, J., Whiteman, K., Stephens, K., Henry, C., & Swanson-Biearmann, B. (2022). Improving Communication and Collaboration Skills in Graduate Nurses: An Evidence-based Approach| OJIN: The Online Journal of Issues in Nursing. *Online Journal of Issues in Nursing*, *27*(2)

Li, Y., & Luo, Y. (2022). The influencing factors of clinical nurses' problem solving dilemma: a qualitative study. *International journal of qualitative studies on health and well-being*, *17*(1), 2122138

Lighthall, G., & Vazquez-Guillamet, C. (2015). Understanding decision making in critical care. *Clinical medicine & research*, *13*(3-4), 156-168.

Manetti, W. (2019, January). Sound clinical judgment in nursing: A concept analysis. In *Nursing forum* (Vol. *54,* No. 1, pp. 102-110).

Mann N. (2018) Application of Clinical Judgment Models to the Development of Academic Advisors. *NACADA Journal*; *38* (2): 61–71. https://doi.org/10.12930/NACADA-17-038

Ortega-Lapiedra, R., Barrado-Narvión, M., & Bernués-Oliván, J. (2023). Acquisition of competencies of nurses: improving the performance of the healthcare system. *International journal of environmental research and public health*, *20*(5), 4510.

Sabei, S., & Lasater, K. (2016). Simulation debriefing for clinical judgment development: A concept analysis. *Nurse Education Today*, *45*, 42-47.

Seada, A., Etway, E. & El-Shafay, S. (2022). Impact of Problem-based Learning on Nurse Manager's Managerial Competencies. *International journal of health sciences*, *6*(S5), 8794-8808.

Seidi, J., Alhani, F., & Salsali, M. (2015). Nurses' clinical judgment development: qualitative research in Iran. Iranian Red Crescent Medical Journal, 17*(9).*

Sibiya, M. (2018). Effective communication in nursing. *Nursing*, *19*, 20-34.

Standing M. (2020) Clinical Judgment and Decision Making in Nursing. *Yonago Acta*, 1-288.

Supriyatno, T., Susilawati, S., & Hassan, A. (2020). E-learning development in improving students' critical thinking ability. *Cypriot Journal of Educational Sciences*, *15*(5), 1099-1106.

Williams. (2016) African clinical nursing environment: a concept analysis. *Health SA Gesondheid*; *21* (1), 33-45.

Zaki, A., Mostafa, G., & Ahmed, E. (2020). Enhancing Managerial Skills for Intern-Nurses by Using Problem-Based Learning Strategy. *Journal of Nursing Science Benha University, 1*(2), 77-144.