



A comparative study to assess the nurse competence care among professional nurses working in ICU and Non ICU units in selected hospitals at Bagalakot

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Abstract

Background of the study: Nurses inevitably encounter patients who require care aimed at limiting therapeutic effort (LTE), even though many of them are not prepared to provide support to individuals with terminal illnesses and their families.

Aim: To compare the nurse competence care among professional nurses working in ICU and Non ICU unit.

Materials and Methods: The study was conducted among 80 staff nurses (40 from ICU units and 40 from Non ICU units). The samples were selected by using purposive sampling technique. Unpaired t test was used to compare the nurse care competence between ICU staffs and Non ICU staffs. Nurse care competence scale was used to collect the data from staff nurses working in ICU and Non ICU units. Chi square test was used to find out the association between Nurse competence care scores with selected demographic variables.

Results: The study result found that comparison of Nurse competence scores between professional nurses from ICU and Non ICU units. It shows that 37 staff nurses from ICU unit had good nurse competence score and 03 are had very good nurse competence score. From non ICU unit 01 staff had quite good nurse competence score whereas 39 staffs are having good nurse competence score. There is a significance difference found between ICU staff and Non ICU staff nurse competence score level ($t=4.721$, $p=< 0.0001$).

Conclusion: There is a need for some intervention for improving nurse care competence among staffs working other than ICU wards. This type of studies required more attention and replication.

Keywords: Staff nurses, ICU, Non ICU, nurse care competence

Introduction

It is estimated that by the year 2030 the need for intensive and critical care will grow by 25%, for example, due to the fact that the Finnish population is getting older [1]. Intensive care unit nurses (ICU nurses) are the largest professional group working in the ICUs. Severely ill patients and families benefit from the attention of highly trained and skilled personnel [2, 3]. ICU nurses contribute to patient safety, such as improved patient outcomes, reduced morbidity and mortality, and decreased complications, errors, and overall costs [4-9]. Competent ICU nurses have a significant impact on ICU patient's physiological and psychological outcomes, for example, evidence based nursing interventions and ethical activity. We know that there is a worldwide need for competent nurses [15]. In nursing practice, nurses get to demonstrate on a regular basis clinical competence as well as a sound theoretical knowledge base according to nationally recognized frameworks [3, 10, 11]. Competence concept is very multidimensional (e.g., focusing on clinical practice [nursing process], ethics, collaboration, leadership, education, and development work) and strongly related to, for example, age, work experience, and frequency of using

specific competencies.

Competence is studied worldwide (10 documents from Europe, 7 documents from Australia and New Zealand, and 4 documents from USA, Canada, and Brazil); thus, there is lacking systematic competence evaluation research. Evaluation is often performed by self-assessment [12] or knowledge test [15]. ICU nurses' self-assessed competence was evaluated as ranging from moderate to excellent: from moderate to good (Sample consisting of newly registered ICU nurses) [14], good (Sample consisting of ICU nurses with varying work experience) [12] and from good to excellent (Sample consisting of ICU nurses with varying work experience) [13]. European ICU nurses' overall knowledge score was 66% of 100 points (Min 22, max 91, and SD 12); the main factor that contributed to variance in scores is length of nurses' intensive care experience. The knowledge category with the lowest score was respiration and ventilation [16].

Materials and Methods

Objectives

1. To assess the nurse competence care of professional nurse working in ICU

2. To assess the nurse competence care of professional nurse working in Non ICU
3. To compare the nurse competence care of professional nurse working in ICU and Non ICU
4. To find the association between nurse competence care scores with selected demographic variables of professional nurses working in ICU and Non ICU units

Hypothesis: The following hypothesis will be tested at 0.05 level of significance

H₁: There is a significant difference between nurse competence care scores between professional nurses of ICU and Non ICU units

H₂: There is a significant association between nurse competence care scores with selected demographic variables of professional nurses of ICU Unit

H₃: There is a significant association between nurse competence care scores with selected demographic variables of professional nurses of non ICU Unit

- **Research Approach:** Quantitative research approach is used for this study
- **Research design:** Descriptive comparative research design was used in this study
- **Research Variable:** nurse competence care of professional nurses
- **Sampling technique:** Purposive sampling technique was used in this study
- **Sample size:** 80 professional nurses were selected as a sample. 40 samples from ICU Units and 40 samples from Non ICU Units from selected hospital of Bagalakot
- **Setting of the study:** The present study was done at selected hospital at Bagalakot

Inclusion criteria

- The staff nurses working in both ICU and Non ICU wards
- The staff nurses who are willing to participate in the study
- Both the genders are included in the study

Exclusion criteria

The staff nurses who are suffering with severe illness due to non-communicable disease

Tools used for data collection

Clinical care competence scale was used to assess the nursing personnel care competence from ICU and Non ICU units from selected hospital of Bagalakot

Results and Discussions

Demographic data N=80

Table 1: Shows that professional nurses working in ICU units have the age group like 03 staffs are having the age less than 25 years, 17 staff are having the age between 25 -30 years, 12 staffs are having the are in the age group of 30-35 years and 8 staffs are in the age group of more than 35 years. Professional nurses from Non ICU units are having the age group like 05 staff are in the age group of less than 25 years, 18 staff are in the age group of 25-30 years, 11 staff are in the age group of 30-35 years and 06 staffs are in the age group of more than 35 years. N=80

Age in years	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
<25	03	7.5	05	12.5
25-30	17	42.5	18	45
30-35	12	30	11	27.5
>35	8	20	06	15
Total	40	100	40	100

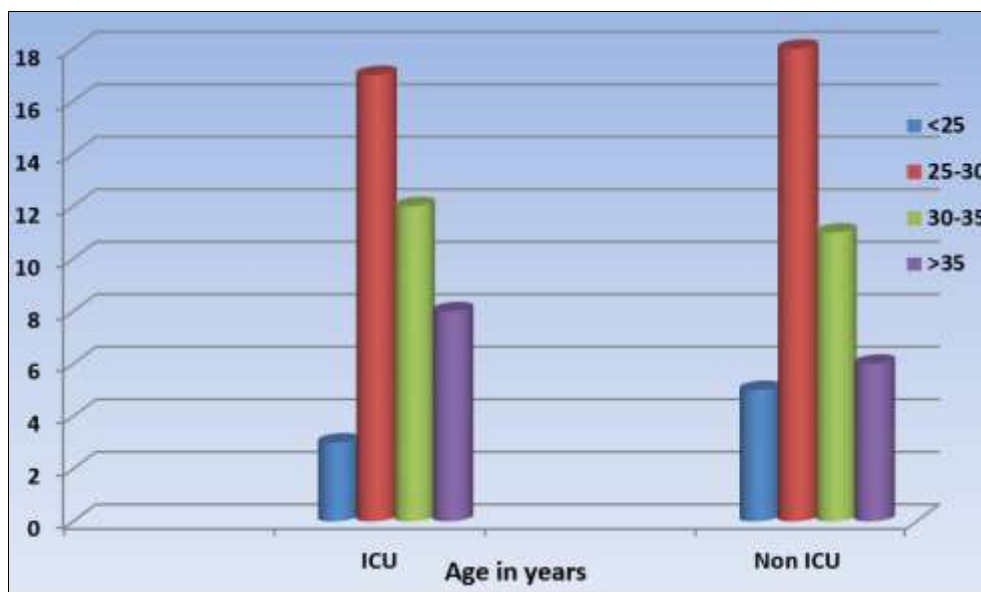


Fig 1: Multiple cylindrical bar diagram shows that age of staff nurses from ICU and Non ICU units. N=80

Table 2: Shows that 32 male staffs and 08 female staffs are involved in research study from ICU units where as 21 male staff nurses and 19 female staff nurses are involved in research study from Non ICU units. N=80

Gender	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
Male	32	80	21	52.5
female	08	20	19	47.5
Total	40	100	40	100

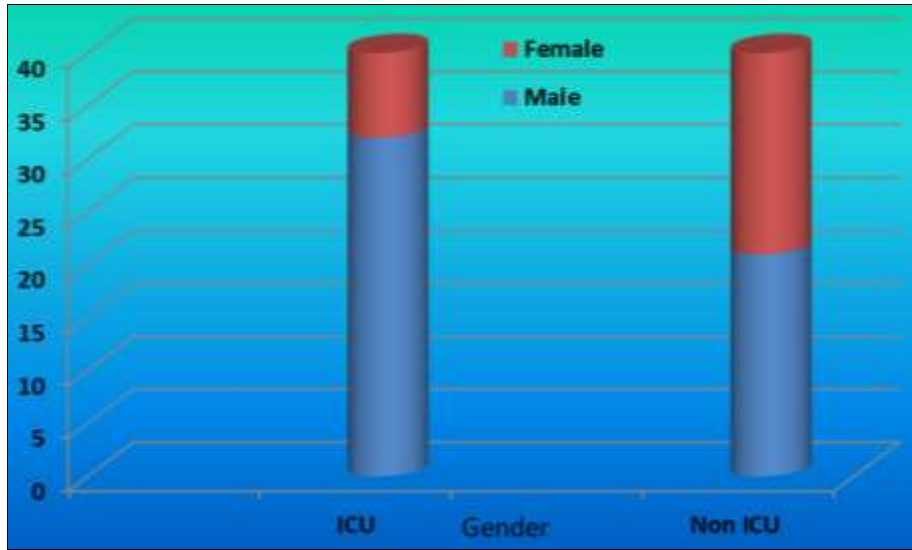


Fig 2: Stacked cylindrical bar diagram indicates that distribution of staff nurses from ICU and Non ICU units as per gender wise N=80

Table 3: Represents that 22 staffs are belongs to Hindu, 13 staffs are from Muslim religion and 05 staffs from Christian religion from ICU unit. Whereas 30 staffs are belongs to Hindu religion, 09 are from Muslim religion and 01 staff from Christian religion from Non ICU Units N=80

Religion	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
Hindu	22	55	30	75
Muslim	13	32.5	09	22.5
Christian	05	12.5	01	2.5
Total	40	100	40	100

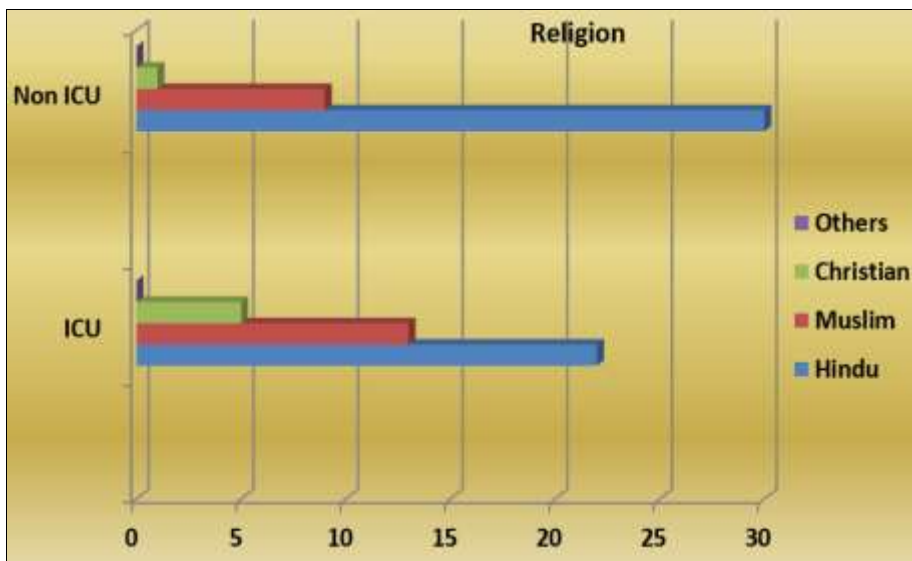


Fig 3: Horizontal multiple bar diagram shows that staff nurse’s distribution as per religion wise from ICU and Non ICU units N=80

Table 4: Shows that 04 staff nurses are having less than 05 years of working experience, 18 staff nurses are having 5-10 years of experience, 17 staff nurses are having 10-15 years of experience and 01 staff had more than 15 years of experience from ICU units. Whereas from non ICU units 08 staffs are having less than 05 years of experience, 12 staffs are having 5-10 years of experience, 15 staffs are having 10-15 years of experience and 05 staffs are having more than 15 years of experience. N=80

How many years of experience	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
< 05 years	4	1	08	20
5-10 years	18	45	12	30
10-15 years	17	42.5	15	37.5
>15 years	01	2.5	05	12.5
Total	40	100	40	100

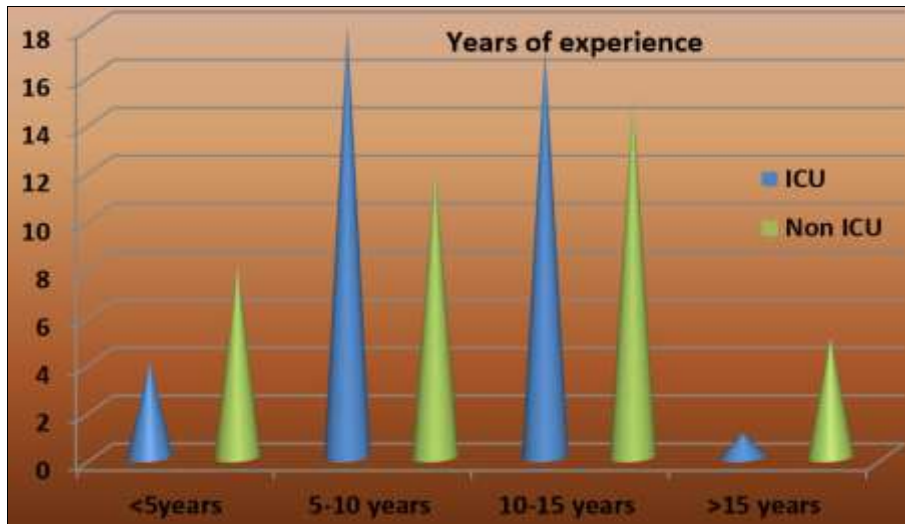


Fig 4: Cone diagram shows that distribution of staff nurses from ICU and Non ICU unit as per years of working experience N=80

Table 5: Represents that from ICU units 04 staff nurses are having less than 10000 rupees monthly income, 15 staff are having 10000-20000 and 20000-30000 rupees monthly income respectively, 06 staffs are having more than 30000 rupees monthly income. Whereas from Non ICU units 21 staffs are having 10000-20000 rupees monthly income, 15 staffs are having 20000-30000 rupees monthly income and 04 staffs are having more than 30000 rupees monthly income. N=80

Monthly income in rupees	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
<10000/-	04	10	00	00
10000 -20000	15	37.5	21	52.5
20000-30000	15	37.5	15	37.5
>30000	06	15	04	10
Total	40	100	40	100

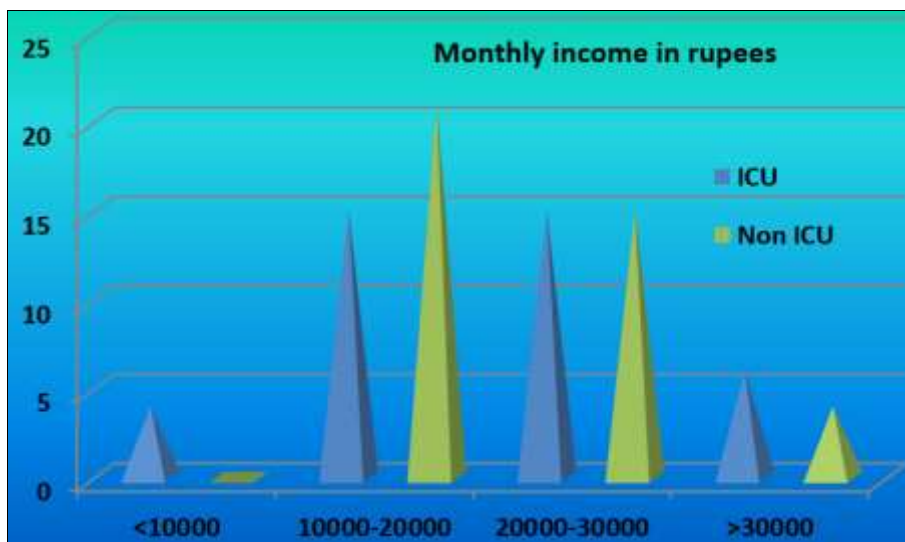


Fig 5: Pyramid diagram shows that staff nurses distribution from ICU and Non ICU units as per monthly income in rupees. N=80

Table 6: Shows that from ICU units 35 staff nurses are completed Diploma Nursing as educational qualification, 03 staffs are completed BSc Nursing, and 02 staff are completed PB BSc nursing. From Non ICU unit 30 staffs are completed diploma nursing as educational qualification, 07 staffs are completed BSc Nursing and 03 staffs are completed P B BSc nursing. N=80

Educational qualification	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
Diploma Nursing	35	87.5	30	75
B Sc Nursing	03	7.5	07	17.5
M Sc Nursing	0	0	0	0
PB BSc Nursing	2	5	03	7.5
Total	40	100	40	100

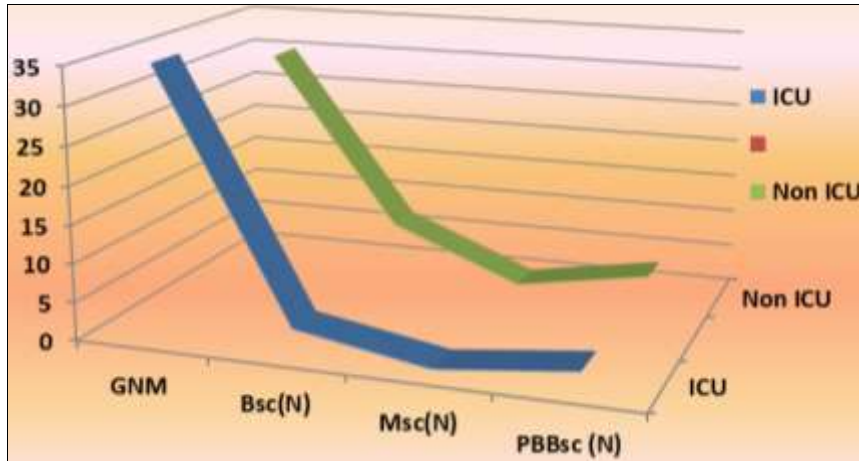


Fig 6: Line diagram indicates the distribution of staff nurses from ICU and Non ICU units as per educational qualification. N=80

Table 7: Shows that From ICU unit 36 staffs are expressed able work alone as yes and 04 staffs they said no for work alone. Whereas from non ICU units 38 staffs are expressed they are able to work alone and 02 staff they said no. N=80

Able to work alone	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
Yes	36	90	38	95
No	04	10	02	5
Total	40	100	40	100

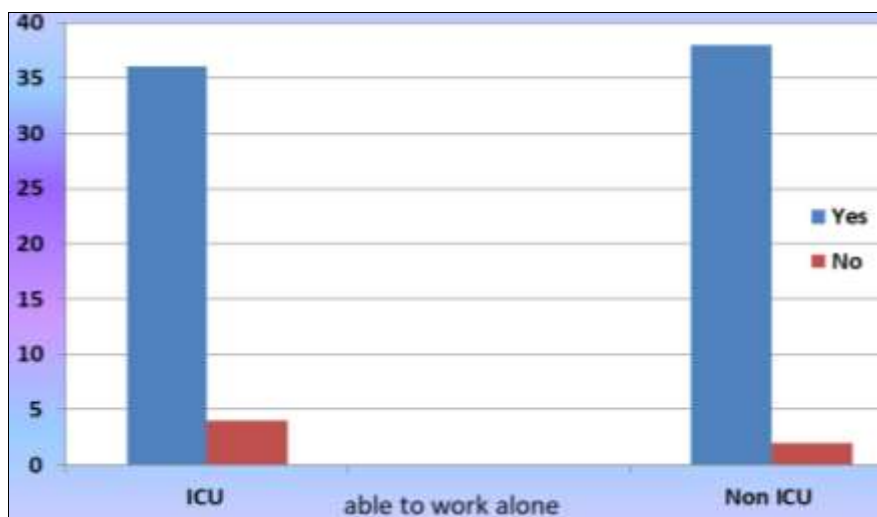


Fig 7: Bar diagram shows that distribution of staff nurses from ICU and Non ICU units as per Able to work alone. N=80

Table 8: Represents that From ICU unit 36 staff are said yes for managing emergency condition alone, 04 staffs they said no. whereas from Non ICU unit 37 staff nurses are said yes for managing emergency condition alone, 03 said no. N=80

Able to manage emergency condition alone	Professional nurses from ICU		Professional nurses from Non ICU	
	Frequency	%	Frequency	%
Yes	36	90	37	92.5
No	04	10	03	7.5
Total	40	100	40	100



Fig 8: Cylindrical bar diagram shows that distribution of staff nurses from ICU and Non ICU units as per able to manage emergency condition alone.

Nurse competence of ICU staff Nurses N=40

Table 9: Shows that 37 staff nurses from ICU unit had good nurse competence score (110-165) and 03(165-219) are had very good nurse competence score.

Level	Score	F	%
Low	0-55	0	0
Quite good	55-110	0	0
Good	110-165	37	92.5
Very good	165-219	3	7.5
	Total	40	100%

Nurse competence of Non ICU staff Nurses N=40

Table 10: Represents that from non ICU unit 01 staff had quite good nurse competence score (55-110), whereas 39 staffs are having good nurse competence score (110-165).

Level	Score	F	%
Low	0-55	0	0
Quite good	55-110	1	2.5
Good	110-165	39	97.5
Very good	165-219	0	0
	Total	40	100%

Comparison of nurse competence both ICU and Non ICU staff nurse N=80

Table 11: Represents that comparison of Nurse Competence scores between professional nurses from ICU and Non ICU units. It shows that 37 staff nurses from ICU unit had good nurse competence score and 03 are had very good nurse competence score. From non ICU unit 01 staff had quite good nurse competence score whereas 39 staffs are having good nurse competence score.

Sr. No	Level	Score	Professional nurses from ICU		Professional nurses from Non ICU	
			F	%	F	%
1	Low	0-55	0	0	0	0
2	Quite good	55-110	0	0	1	2.5
3	Good	110-165	37	92.5	39	97.5
4	Very good	165-219	3	7.5	0	0
		Total	40	100	40	100

Significant difference between ICU and non ICU Staff Nurses Competence level N=80

Table 12: Indicates that Mean scores of Nurse Competence level among ICU staff nurses had 147.12 where as non ICU staff had 134.92. The median score of ICU staff is 131.5 and 111 among Non ICU staffs. The SD value of ICU and Non ICU staff is 12.923. The range of ICU staff nurse competence score is 49 and 48 among Non ICU staff. There is a significance difference found between ICU staff and Non ICU staff nurse competence score level ($t=4.721$, $p< 0.0001$).

Staff	Mean	Median	SD	Range	t value	df	Table value	significant
ICU	147.125	131.5	12.923	49	4.721	78	1.9941	Significant
Non ICU	134.925	111	12.923	48				

Association between ICU Staff Competency with Selected Demographic variables N=40

Table 13: Represents that there is no significant association between nurse competency scores with selected demographic variables of staff nurses from ICU units.

S No	Demographic Variables	df	X2	Table value	P value	Significant
1	Age	3	0.852	7.99	0.836993	Not significant
2	Gender	1	0.76	3.89	0.383329	Not significant
3	Religion	3	0.413	7.99	0.937544	Not significant
4	Year	3	2.505	7.99	0.474388	Not significant
5	Income	3	1.917	7.99	0.753724	Not significant
6	Educational qualification	3	1.203	7.99	0.752285	Not significant
7	Are you work alone	1	0.284	3.89	0.594091	Not significant
8	Emergency condition alone	1	0.284	3.89	0.594091	Not significant

Association between Non ICU Staff Competency with Selected Demographic variables N=80

Table 14: Represents that there is no significant association between nurse competency scores with selected demographic variables of staff nurses from Non ICU units.

S No	Demographic Variables	df	X2	T value	P value	significant
1	Age	3	5.212	7.99	0.156916	Not significant
2	Gender	1	1.533	3.89	0.215663	Not significant
3	Religion	3	2.908	7.99	0.406028	Not significant
4	Year	3	4.158	7.99	0.244901	Not significant
5	Income	3	0.101	7.99	0.991717	Not significant
6	Educational qualification	3	0.743	7.99	0.863046	Not significant
7	Are you work alone	1	0.643	3.89	0.422627	Not significant
8	Emergency condition alone	1	0.0526	3.89	0.818599	Not significant

Discussion

The present study shows that Mean scores of Nurse Competence level among ICU staff nurses had 147.12 whereas non ICU staff had 134.92. The median score of ICU staff is 131.5 and 111 among Non ICU staffs. The SD value of ICU staff is 12.923. The similar study findings shows that Intensive care unit nurses' self-assessed basic competence was good (mean 4.19, SD 0.40)¹⁷. The present study shows that 37 staff nurses from ICU unit had good nurse competence score (110-165) and 03(165-219) are had very good nurse competence score. And from non ICU unit 01 staff had quite good nurse competence score (55-110), whereas 39 staffs are having good nurse competence score (110-165). The similar study shows that the average clinical competence of nurses was 177.32, with a standard deviation of 19.19, and 31.2% of the respondents had a high level of clinical competence¹⁸.

Conclusion

The ICU staff nurses are having better Nurse care competence level than the staff nurses belongs to Non ICU units. There is a need of some intervention programme to enhance the nurse care competence level among staff nurses irrespective of working areas in the hospital. The same

study can be conducted with more number of different hospital settings and more number of samples in different setting for generalization of the findings.

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