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## Factors influencing clinical competencies of intensive care unit nurses in selected hospitals of Kamrup (Metro), Assam

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### Abstract

**Background:** Nursing is a multidimensional profession requiring a good knowledge base, attitude, skills and critical thinking abilities. The intensive care unit environment is a dynamic area of work with emerging technologies and therapies to ease patients' recovery through the life threatening illness. Intensive care unit (ICU) nurses play a crucial role in the assessment, care and recovery of patients who experience critical illness. Nurses' expertise, clinical competence and ICU knowledge allows them to work dedicatedly on their own and in collaboration with other health care team members in ICU. There are many factors (both internal and external) prevails in the ICU environment that sometimes influence the nurses' clinical competencies in the ICU. Developing and measuring competencies of nurses are highly relevant issues in intensive care units globally.

**Materials & Methods:** The present research study was conducted on 218 registered nurses selected by simple random sampling. The purpose of the study was explained to the nurses and written consent was taken from them and also assurance was given to maintain the confidentiality. The baseline data was collected from the samples using the structured interview schedule. Level of nurses clinical competencies was assessed by using the observational checklist and the factors influencing the clinical competencies of the ICU nurses was assessed by the Nurses competence scale (Rating Scale).

**Results:** As per the nurse competence scale, the score of clinical competencies of ICU nurses are within the range of very good (38-100) with majority of nurses (78%), mean of 94.17 and S.D 5.97 respectively. The factors especially teaching – coaching & work role has maximum score of 68, mean 37.66, SD 9.72 and 58, mean 45.4, SD 10.83 respectively suggesting that these two factors has influence on the clinical competencies of ICU nurses. There is significant association of factors influencing clinical competencies of ICU nurses with selected demographic variables. Factors such as teaching coaching, managing situations, therapeutic interventions and ensuring quality is significantly associated with ICU Nurses' educational qualification. Diagnostic functions and managing situations is significantly associated with nurses shift duty. Diagnostic functions' is associated with usual length of shift duty and average patient assignment of ICU nurses. Helping role, managing situation and ensuring quality is associated with marital status of ICU nurses. Helping role and managing situation is also significantly associated with no.of children the ICU nurses have.

**Conclusion:** The study concludes that the factors such as teaching – coaching & work role have maximum influences on the level of clinical competencies of ICU nurses.

**Keywords:** clinical competencies, ICU nurses, teaching – coaching, work role

### Introduction

Professional skills and competency have effects on job attitudes including organizational commitment and professional affiliations. In order to achieve the goals of the health system, manpower is required to have not only expertise, empowerment and competency, but also high levels of organizational attachment and commitment as well as willingness to become involved in the activities beyond their common and pre-determined duties. Therefore, the levels of attachment and commitment of nurses towards their affiliated organizations can have impacts on the promotion of their clinical competency. HS Song, J Choi & YJ Son<sup>1</sup> conducted a cross sectional study to describe the relationship between professional communication competencies and nursing performance of critical care nurses. 197 intensive care unit staff nurses of 3 tertiary academic medical centres in South Korea participated in this study. Professional communication competencies were only the significant predictors of nursing performance after socio demographic characteristics.

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In addition, the greater professional communication competencies of nurses were higher experience, higher educational level, more years of overall clinical and intensive care unit experience and higher monthly salary. The findings of the study indicate that communication skills- related training should be included in the practical education to improve nursing performance for the quality of intensive care. Karami A, Farokhzadian J & Foroughameri G<sup>2</sup> conducted a descriptive -analytic study to evaluate the nurses' professional competency and their organizational commitment as well as the relationship between these two concepts. Study was carried out in the hospitals affiliated with a University of Medical Science in the Iran. 230 nurses were selected using stratified random sampling. Data were gathered through socio demographic performa, competency inventory for registered nurse. (CIRM) and Allen Meyer's organizational commitment. Results showed that professional competency (Mean±SD: 2.82±0.53, range 1.56-4.00) and organization commitment (Mean±SD: 72.80±4.95, range: 58-81) of the nurses were at moderate levels. There was no statistically significant correlational between professional competency and organizational commitment but there were significant differences in professional competency based on marital status ( $p=0.03$ ) and work experience ( $p<0.001$ ).

### Materials & Methods

The present study is based on descriptive survey design where the investigator is interested to assess the clinical competencies of ICU nurses, identify the factors influencing nurses' clinical competencies in ICU. The factors could be theoretical knowledge, experiences, environment, independence and work satisfaction. The investigator is also interested to find out if any significant association is present or not between the level of clinical competencies and the demographic variables. The study was carried out in the selected ICU's of Health City Hospital, Guwahati, Assam. The sample size was 218 registered ICU nurses & sampling method used was simple random sampling. The tools used for data collection were Demographic Performa (to collect the baseline information), Level of nurses clinical competencies was assessed by using the observational checklist and the factors influencing the clinical competencies of the ICU nurses was assessed by the Nurses competence scale (Rating Scale). For the content validity & reliability the tool along with the statement and objectives is given to 5 experts'. Based on their expert opinion, modification is done. Nurse Competence Scale is a standardised scale used in the interest of public domain. The

reliability of the tool is tested by using Guttman Split – Half Coefficient and 'r' was obtained 0.84 which indicated the tool is reliable. The investigator obtained a formal administrative permission from the Medical Director & the Nursing Superintendent of the hospitals. The purpose of the study was explained to the nurses and written consent was taken from them and also assurance was given to maintain the confidentiality. The baseline data was collected from the samples using the structured interview schedule.

### Results

Majority of nurses (43.6%) are in the age group of 25 -30 years, 85.3% nurses are female, 50.5% nurses are GNM. Majority of nurses (60.1%) works in the morning shift and their (61%) usual length of shift is 6 hours. Nurses (36.7%) get an average of two – three patient allocation. Majority (57.3%) nurses have 6months – 3 years of working experience in ICU. Majority (43.6%) of nurses under study has salary of Rs. 11000- 15000. Majority (81.2%) of nurses are unmarried and 87.2% has no children.

**Table 1:** Level of clinical competencies

Score	Percentage (%)	Mean	S.D
15-47.9 (Average)	11.9%	41.94	5.21
25-75 (Good)	10.1%	68.3	7.34
38-100 (Very Good)	78%	94.17	5.97

As per table no 1, the maximum score of clinical competencies of ICU nurses are within the range of very good (38-100) with majority of nurses (78%), mean of 94.17 and S.D 5.97 respectively.

**Table 2:** Score, Mean & S.D of factors influencing clinical competencies of ICU nurses

Factors	Min score	Max score	Mean	S.D
Helping Role	6	24	16.67	3.65
Teaching- Coaching	10	68	37.66	9.72
Diagnostic functions	3	37	16.25	4.45
Managing situations	0	28	19.83	4.78
Therapeutic interventions	0	33	23.76	6.52
Ensuring quality	0	25	14.75	4.55
Work Role	0	58	45.4	10.83

Table 2 interprets that the factors especially teaching – coaching & work role has maximum score of 68, mean 37.66, SD 9.72 and 58, mean 45.4, SD 10.83 respectively suggesting that these two factors has influence on the clinical competencies of ICU nurses.

**Table 3:** Spearman Rank Correlations showing association level of clinical competencies of ICU nurses with selected demographic variables

		Helping Role	Teaching - Coaching	Diagnostic Functions	Managing Situations	Therapeutic Interventions	Ensuring Quality	Work Role
Age	Rho	-.005	.023	-.093	-.068	.013	.080	-.009
	p	.939	.739	.171	.320	.847	.237	.899
Gender	Rho	-.013	-.022	.125	.107	.075	-.025	.066
	p	.849	.748	.065	.114	.269	.709	.329
Education	Rho	-.024	-.151*	-0.0001	-.136*	-.158*	-.220**	-.012
	p	.730	.026	.999	.044	.019	.001	.856
Shift Duty	Rho	-.010	.042	.143*	.151*	.056	-.040	.000
	p	.878	.537	.035	.026	.415	.560	.998
Usual length of shift	Rho	.068	.127	.134*	.092	.089	.130	.062
	p	.321	.061	.048	.175	.192	.056	.365
Average patient assignment	Rho	-.046	-.068	.156*	.054	-.085	-.082	.016

n=218

	p	.495	.319	.021	.427	.210	.227	.811
Experience	Rho	.037	.030	-.014	.023	-.025	.044	.017
	p	.582	.656	.832	.740	.716	.517	.800
Salary/ month (Rs.)	Rho	.110	.043	.013	-.007	.031	.042	.072
	p	.105	.524	.853	.923	.650	.534	.287
Marital Status	Rho	.137*	.102	.050	.167*	.117	.151*	.086
	p	.044	.132	.463	.013	.085	.026	.204
No. of children	Rho	.151*	.081	.067	.143*	.069	.102	.031
	p	.026	.234	.322	.035	.310	.131	.653

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

As per the table no 3 there is significant association of factors influencing clinical competencies of ICU nurses with selected demographic variables. Factors such as teaching coaching, managing situations, therapeutic interventions and ensuring quality is significantly associated with ICU Nurses' educational qualification. Diagnostic functions and managing situations is significantly associated with nurses shift duty. Diagnostic functions' is associated with usual length of shift duty and average patient assignment of ICU nurses. Helping role, managing situation and ensuring quality is associated with marital status of ICU nurses. Helping role and managing situation is also significantly associated with no. of children the ICU nurses have.

### Discussion

Competence is one of the major requirements that the nurses should have in clinical settings. Competence is a fundamental component of nursing care and plays an important role in the quality of services provided by nurses. The present study results showed that majority of nurses (43.6%) are in the age group of 25 -30 years, 85.3% nurses are female, 50.5% nurses are GNM. Majority of nurses (60.1%) works in the morning shift and their (61%) usual length of shift is 6 hours. Nurses (36.7%) get an average of two – three patient allocation. Majority (57.3%) nurses have 6months – 3 years of working experience in ICU. Majority of the nurses has salary of Rs. 11000- 15000. Majority (81.2%) of nurses are unmarried and 87.2% has no children. The maximum score of level of clinical competencies of ICU nurses are within the range of very good (38-100) with majority of nurses (78%), mean of 94.17 and S.D 5.97 respectively. The factors especially teaching – coaching & work role has maximum score of 68, mean 37.66, SD 9.72 and 58, mean 45.4, SD 10.83 respectively suggesting that these two factors has influence on the clinical competencies of ICU nurses. There is significant association of factors influencing clinical competencies of ICU nurses with selected demographic variables. Factors such as teaching coaching, managing situations, therapeutic interventions and ensuring quality is significantly associated with ICU Nurses' educational qualification. Diagnostic functions and managing situations is significantly associated with nurses shift duty. Diagnostic functions' is associated with usual length of shift duty and average patient assignment of ICU nurses. Helping role, managing situation and ensuring quality is associated with marital status of ICU nurses. Helping role and managing situation is also significantly associated with no. of children the ICU nurses have.

The study findings were supported by a study conducted by Khomeiram, RT., Yepta, ZP., Kiger, A.M & Ahmadi, F<sup>3</sup> (2006) [3] on 27 registered nurses in two university affiliated hospitals on professional competence : factors described by nurses as influencing their development. The findings

suggested that the factors influencing the process of developing professional competence in nursing extend across personal and extra personal domains. Six descriptive categories were identified from the data: experience, opportunities, environment, personal characteristics, motivation and theoretical knowledge. An understanding of these factors may enhance the ability of nursing managers and educators to enable student and qualified nurses to pursue effective competency development pathways to prepare them to provide high standard of care.

The study findings were supported by a research study conducted by Zhang, Z [4] on nursing competencies: personal characteristics contributing to effective nursing performance. Following the Mcber method, 50 experienced nurses were asked to report 82 valid critical incidents in their jobs. Ten competencies including interpersonal understanding; commitment, information gathering etc were identified. Skills, traits, motives and attitudes all contribute to effective nursing performance. It is required to develop nursing competencies and to provide realistic working behaviours for nursing education and management.

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