Clinical practice competency and associated factors among graduating nursing students attending at Universities in Amhara region, Ethiopia: Institution based cross-sectional study, 2018

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Research note

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Abstract

Objective To assess clinical practice competency and associated factors among graduating nursing students in universities of Amhara region, Northern Ethiopia. **Result** This study showed that, 33.6% of the participants were clinically competent and there is slight variation in the clinical competency of participants at different Universities found in Amhara region. Clinical practice competency of students was affected by clinical instructor factors. Students who had got orientation about objective of clinical practice were 2.387 times more likely to be clinically competent [AOR: 2.387; 95% CI (1.011-5.635)]. Students who had clinical instructor who spent enough time for mentoring them during clinical practice had 2.247 times more likely to be clinical competent [AOR: 2.247; 95% CI (1.100-4.593)]. Students who had instructors that follow them while they conduct a procedure were 2.655 times more likely clinically competent [AOR: 2.655; 95% CI (1.294-5.449)]. This study also revealed that clinical practice competency of students was affected by assessment methods factors. Students with clinical practice assessment checklist had 2.663 times higher clinical practice competency [AOR: 2.663; 95% CI (1.324-5.358)]. Regarding staff-student factors, students who were allowed to perform tasks by clinical staffs were 5.858 times more likely to be clinical competent task [AOR: 5.858; 95% CI (2.657-12.916)]

Introduction

Nursing is a dynamic, caring, and helping relationship in which nurses assist the client to achieve and obtain optimal health. As a profession, it undergoes a huge transformation since the time of Florence nightingale (1). Graduating nurse should apply the core competencies which are professional role, responsibility and accountability; health assessment and diagnosis; therapeutic management; and health promotion and prevention of illness and injury (2, 3).

Clinical practice is the means by which nursing students learn to apply theory of nursing, facilitating integration of theoretical knowledge and practical skills in the clinical setting (4-6). One of the outcomes for effective learning in clinical practice is clinical competence which is the ability to successfully apply professional knowledge, skill and attitude to new situations as well as familiar ones (1, 7).

Health workers, including nurses, are not adequately prepared to meet the needs of society, especially in developing countries. The rapidly shifting of balance in availability and demands of competent health care workforce and the change in health care system have highlighted the necessity for graduating students to be clinical competent (10). A global report into health education sees educational institutions as crucial to transform health care systems. However, in many countries there is a lack of capacity in training, budget support and infrastructure (1). Improving the productivity and performance of health care workers in order to enhance efficiency in health interventions, is a major challenge for African countries (13).

In Ethiopia, government is the main health care service provider. The health care system of Ethiopia is facing a serious shortage of skillful health workforce. So, when students start clinical practice, they

encounter different problems that can affect their clinical competency (14). Therefore, the purpose of this study is to assess clinical competency and associated factors among graduating nursing students of Universities in Amara Region, northern Ethiopia, 2018.

Methods

Study design and setting

Institutional based cross-sectional study design was conducted from February 25/2018 – April 25/2018 G.C. among graduating nursing students in Amhara region universities namely University of Gondar, Bahir Dar University, Wollo University, Debre Birhan University, Debre Marcos University and Woldia University

Source Population

All graduating BSc nursing students attending in Amara Region Universities in 2018.

Study population

Graduating day time BSc nursing students attending in Amara Region Universities in 2018.

Inclusion and Exclusion Criteria

Graduating BSc nursing students attending regular degree program were included, whereas students who were critically ill during data collection period were excluded.

Sample Size Determination

Sample size was calculated using a single population proportion formula designated as $n = (Z^2 \alpha/2)p(1-p) / d^2$ based on the assumptions of P-value=0.25 which was the proportion of clinical practice competency in Hawasa university (4), a 95% confidence level, 5% margin of error (d) and 10% non-response rate. Accordingly, the total sample size calculated was 307.

Sampling and Sampling Procedure

All universities having graduating nursing students were included in the study, and total sample size was proportionally allocated to each university. The lists of graduating students were obtained from the respective university registrar. Then, the study participants from each university were selected by computer generated simple random sampling technique.

Data Collection Method

The data was collected by six BSc nurses' through self-administered questionnaire and observation technique which was adapted from previous studies (4). Observation technique was used to assess students' level of competency and self-administered questionnaires' was used to assess contributing factors.

Data management and Analysis

The data were entered using Epi Data version 4.2 and exported to SPSS version 24 for analysis. Descriptive statistics like frequency, percentage and standard deviation was computed. Binary logistics regression model was applied to identify determinant factors related clinical practice competency. Variables with P value less than 0.25 on bi-variate analysis were entered to multi-variate analysis. 95% confidence interval was used to identify associated factors in multi-variable binary logistic regression model. Hosmer–Lemeshow goodness of the model fit was checked and analysis was done by entering procedure.

Result

Socio-Demographic Characteristics

A total of 307 graduating nursing students were participated. One hundred seventy three students were males. Regarding to age, (82.4%) of students were in the range between 20-24 years and the mean ($\pm$ SD) age was 22.68 ($\pm$ 1.841) years. One hundred sixty one (52.4%) of the students were followers of orthodox Christianity (table 1).

Table1: Socio-demographic characteristics of graduating nursing students, Amara region Universities, 2018.

Clinical Practice Competency

This study showed that, (33.6%) of the participants was clinically competent and there is slight variation in clinical competency of participants at different Universities found in Amhara region (figure 1).

Figure 1. Level of clinical practice competence among graduating nursing students at different universities found in Amhara region, 2018.

Factors Associated with Clinical Practice Competency

Logistic regression analysis revealed that, students who had got orientation about objective of clinical practice were 2.387 times more likely to be clinically competent compared to the counterpart [AOR: 2.387; 95% CI (1.011-5.635)]. Similarly, students who had clinical instructor who spent enough time for mentoring them during clinical practice had 2.247 times more likely to be clinical competent [AOR: 2.247; 95% CI (1.100-4.593)]. Students who had instructors follow them while conducts a procedure were 2.655 times more clinically competent than who were not followed by instructors [AOR: 2.655; 95% CI (1.294-5.449)]. This study also revealed that, clinical practice competency of students was affected by assessment methods factors. Students with clinical practice assessment checklist had 2.663 times higher clinical practice competency than student who had no clinical assessment checklist [AOR: 2.663; 95% CI (1.324-5.358)]. Regarding staff-student factors, students who were allowed to perform tasks by clinical staffs were 5.858 times more likely to be clinical competent than those who were not allowed [AOR: 5.858; 95% CI (2.657-12.916)] (table 2).

Table 2: factors associated with clinical practice competency among graduating nursing students, Amhara region Universities, 2018

Discussion

This study revealed that clinical practice competency of students was 33.6% with (CI 27.6-39.6). It is higher than a study done in Hawasa University which was 25.2%. This discrepancy might be due to the difference of study setting and characteristics of study participants as well as technique of data collection. The study conducted in Hawasa was in a single institution, but this study covered six institutions (4). It is lower than study conducted in Health Professionals at Debre Birhan Health Science College which was 78.6%. This may be due to the fact that, the study participants were health professionals (18). The result of this study is also inconsistent with a study conducted in Annals' University of Finland which was 66.7%(9). This might be due to the difference in sample size in which, the previous study use small sample size compared to this study, socio- economic status of study participant and difference in curriculum of the nation.

This study found that, those students who had got orientation about objective of clinical practice were 2.387 times more likely to be clinically competent than student who did not get orientation. Students who spend adequate time with their instructor/mentor during clinical practice were 2.247 times more competent in clinical skill than those who did not get chance to spend enough time with their clinical instructors. Students who had instructors who supervise them while they conduct a procedure were 2.655 times more competent in clinical performance than students who were not followed by instructors during conducting a procedure. This study also revealed that, those students who were assessed in clinical practice with assessment checklist had 2.663 times higher clinical practice competency than student who were not assessed with assessment checklist during their clinical practice. However, this result is inconsistent with the study conducted at Hawasa University among health science students which showed no significant association between those factors. This difference might be due to the difference in the characteristics of study participants and technique of data collection. In this study observation

technique was used in addition to self-administered questionnaire(4). This finding is enlargement with the study conducted at Hawasa University. It also enlargement with a study conducted at Oman (24). This variation might be due to the difference in sampling technique, sample size, study setting and socio-economic status of study participants in which the previous study's sample size was relatively smaller than the current study and also it was used non-probability sampling technique, but this study used probability sampling method. In the current study clinical instructor factor had effect on clinical practice competency which is similar with the study conducted in Annals' University of Finland among graduating nursing students department of Nursing Science (9).

Conclusion

Generally, the results of this study revealed that about more than half of graduating nursing students were clinically incompetent. Clinical instructor variables like presence of orientation about the objective of clinical practice, spending enough time for mentoring and following of students while they conduct a procedure; assessment method factors like presence of assessment checklist; and staff-student interaction factors like allowing them to do a task were significantly associated with clinical practice competency of graduating nursing students.

Limitations of the Study

This study used only quantitative data; the behavioral related information might be missed. Since the questionnaire was self-administered, lack of control over the responses rate, no control over who filled the questionnaires and questions may be miss-understood so that the true impression of the participants may not be gathered.

List Of Abbreviations

AAU: Addis Ababa University; ANS: American Nursing Association; COC: Certificate of Competency; DEUM: Dedicated Education Unit Model; HWs: Health Workers; PI: Principal Investigator; RN: Registered Nurse; WHO: World Health Organization

Declaration

Acknowledgement

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Author's Contributions

AG conceived the study, wrote the study proposal, conducted the field work, supervised data entry, analyzed the data and wrote the manuscript. YT participated in refining the research proposal, supervised the field activity, analyzed the data and wrote the manuscript. EB, KG and AD participated in refining the research proposal, supervised the field activity and analyzed the data. All authors participated and approved the final manuscript.

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Availability of data and material

The datasets used for analysis during the current study are available from the corresponding author on reasonable request.

Ethical approval and consent form

Paper of approval and letter for permission was obtained before the beginning of data collection from departmental review board of Nursing and Midwifery, College of Health Science, Addis Ababa University. Permission letter was provided for Amara region Universities. Written informed consent was provided for study participant and they were explained clearly about the purpose and procedure of data collection, and their confidentiality were ensured.

Consent for publication

Not applicable

Competing interest

The authors declare that, they have no competing interest

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Tables

Table1: Socio-demographic characteristics of graduating nursing students, Amara region Universities, 2018.

Sociodemographic variables		Frequency(No)	Percentage (%)
Sex	Male	173	56.4
	Female	134	43.6
Age	15-19	10	3.3
	20-24	253	82.4
	25-29	44	14.3
Marital status	Single	254	82.7
	Married	53	17.3
Religion	Orthodox	161	52.4
	Protestant	76	24.8
	Muslim	59	19.2
	Other	11	3.6
Ethnicity	Oromo	84	27.4
	Amhara	145	47.2
	Tigre	44	14.3
	Guragie	17	5.5
	Other	17	5.5
Residence	Urban	161	52.4
	Rural	146	47.6

Table 2: factors associated with clinical practice competency among graduating nursing students, Amhara region Universities, 2018

Variables		Clinical practice		COR(95%CI)	AOR(95%CI)
		competency			
		Competent	Incompetent		
Orientation of objective	Yes	80(47.9%)	87(52.1%)	4.678(2.725-8.030)***	2.387(1.011-5.635)*
	No	23(16.43%)	117(83.57%)	1.00	1.00
Enough mentoring time	Yes	62(50.8%)	60(49.2%)	3.629(2.209-5.962)***	2.247(1.100-4.593)*
	No	41(22.2%)	144(77.8%)	1.00	1.00
Integrate theory in to practice	Yes	77(39.9%)	116(60.1%)	2.247(1.331-3.794)**	1.012(0.494-2.074)
	No	26(22.8%)	88(77.2%)	1.00	1.00
Demonstrate skills in cases	Yes	66(47.8%)	72(52.2%)	3.270(1.995-5.362)***	1.559(0.723-3.361)
	No	37(21.9%)	132(78.1%)	1.00	1.00
Follow while doing procedure	Yes	56(54.4%)	47(45.6%)	3.980(2.398-6.605)***	2.655(1.294-5.449)**
	No	47(23.0%)	157(77.0%)	1.00	1.00
Diverse assessment methods	Yes	72(42.9%)	96(57.1%)	2.613(1.580-4.320)***	0.764(0.355-1.647)
	No	31(22.3%)	108(77.7%)	1.00	1.00
Continuous assessment	Yes	70(42.2%)	96(57.8%)	2.386(1.452-3.922)**	1.257(0.605-2.611)
	No	33(23.4%)	108(76.6%)	1.00	1.00
Presence of checklist	Yes	67(52.76%)	60(47.24%)	4.467(2.696-7.399)***	2.663(1.324-5.358)**
	No	36(20.0%)	144(80.0%)	1.00	1.00
Staff allows to perform tasks	Yes	89(46.84%)	101(53.16%)	6.483(3.464-12.134)***	5.858(2.657-12.916)***
	No	14(12.0%)	103(88.0%)	1.00	1.00
Staff encourages to do practice	Yes	82(42.27%)	112(57.73%)	3.207(1.845-5.576)***	1.301(0.574-2.951)
	No	21(18.58%)	92(81.42%)	1.00	1.00

Figures

Figure 1

Level of clinical practice competence among graduating nursing students at different universities found in Amhara region, 2018.