Level of Knowledge and Wound Care Practice at a Tertiary Referral Hospital in Ethiopia: A Survey in 180 Nurses

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Abstract

Background

Wound infections are a global public health challenge, a major cause of morbidity and mortality in low- and middle-income countries. Poor wound care results delayed wound healing process and wound infections. Improving the knowledge and practice of wound care is paramount to reduce wound infection. However, there is no study done in Ethiopia. This study was aimed to assess the knowledge and practices of nurses who worked at Felege Hiwot Specialized Hospital towards wound healing and care.

Methods

A survey was conducted among 180 nurses worked in Felegehiwot specialized hospital during January 1 to 30, 2018. The study participants were selected through simple random sampling technique. Descriptive statistics were used to describe the study participants. Both Bivariable and multivariable ordinal logistic regression was done and proportional odds ratio (POR) with a 95% confidence interval (CI) was reported to show the strength of association. A p-value < 0.05 was used to declare statistically significant.

Result

In this study, 34 (18.7%) and 17 (9.3%) of nurses have a good knowledge and practice on wound healing and care. While 41.8% and nearly three-fourths (60%) of the participants have a poor level of knowledge and practice on wound care respectively. Working experience of fewer than 5 years (aPOR 0.42, 95% CI: 1.11, 2.72), working in the surgical ward (aPOR 5.45, 95 % CI: 1.61, 2.21) and in the emergency department (aPOR, 0.26, 95%CI: 0.03, 0.18) were significant factors of knowledge of wound care. While, get training (aPOR 1.9, 95% CI: 0.59, 0.87) and good knowledge (aPOR 5.56, 95% CI: 1.08, 2.26) on wound care increased the level of practice.

Conclusions

The knowledge and practice of wound care of nurses were found to be poor. Above two-fifth of nurses doesn't provide predischARGE education on wound care. For this, provision of a structured preservice and in-service training and education program on wound healing and care, improve nurses educational level or experience sharing, establish and put in place wound healing and care guideline and assessment tools in hospitals and conduct the further qualitative study the level of wound care practice was recommended.

Background

Wound infections acquired during health care delivery are a global public health challenge, the commonest causes of nosocomial infections accounted to 20% to 25% [1] and leads to sepsis, a life-threatening organ dysfunction caused by a dysregulated host response to infection [2]. It is a major cause of the increasing cost due to extended hospitalization [3, 4], morbidity [5] and mortality particularly in low- and middle-income countries [6, 7].

Wound infection resulted due to the disturbance of the wound healing process that must occur in the proper order, at a specific time, and continue for a specific duration at an optimal intensity [1]. Wounds are physical

injuries that cause a disturbance in the normal skin anatomy and function and many factors can affect wound healing, [4, 8-11] causing impaired tissue repair.

Wound site infections occurred approximately 2% to 5% of the 16 million patients undergoing surgery in united states [1], 22.2 % in Switzerland [12] and are the leading cause of infections in developing countries due to scarce resources and health professionals [13], wound cultures resistant to first-line antimicrobials[14, 15], and poor quality of health care [16]. Antibiotic-resistant wound infections were common sub-Saharan Africa, mainly Tanzania (63%) [17, 18], Benin (34.6%), Congo (31.9%), Togo (14.3%), Madagascar (14.5%) [14] and 7% in Kenya [19].

Proper wound care is one the major preventive majors of wound infections [20-23], the world health organization (WHO) calls to prevent healthcare-associated sepsis with a simple cost effective practice such as hand hygiene [24, 25]. The nurses' knowledge regarding wound care and the interventions provided at an early stage is important for wound healing and all surgical wounds require special nursing care both at the hospital or at home[26-31].

Assessing the knowledge and practice of wound care is paramount to reduce wound infection. Better knowledge of wound care decreases surgical complications, repeated admissions, hospitalization duration, and improves the quality of life [32]. The incidence rate of wound infection is still higher in Ethiopia, 10.9 to 75% [15, 33, 34] and in this hospital [34]. However, there is no study done on the knowledge and practice of wound healing and care at the national and regional level. Therefore, this study was conducted to assess the knowledge and practices of nurse professionals working at Felege Hiwot tertiary referral hospital, regarding wound healing.

Methods

Study Area, design and period

A survey was conducted from January 1 to 30, 2018 in Felege Hiwot tertiary referral hospital found in Bahir Dar city. Bahir Dar is a capital city in the Amhara region in the Northwest of Ethiopia about 578 km from Addis Ababa and is one of the leading tourist destinations in Ethiopia, nearby Lake Tana and Blue Nile River [35]. In the city, there are 12 public health facilities, 10 health centres and 2 hospitals. The hospital is a tertiary hospital, serving over 7 million people as the referral centre and has around 400 beds and 9 operating tables and 750 members of staff and among those 292 are nurses. The hospital provides obstetrics, paediatrics, internal medicine, ophthalmology, ENT and surgery services [36].

Population and sampling

Source populations were all nurses who work in Felege Hiwot hospital. All sampled nurses of Felege Hiwot hospital who selected in a simple randomly technique will be included and nurse managers were excluded. The

total number of representative sample was selected using a single population formula as follows:

$$n = \frac{(Z\alpha/2)^2 p (1-p)}{w^2}$$

w^2

Where n= minimum sample size required for the study, (Z=1.96) with confidence interval of 95% and $\alpha = 0.05$, P=prevalence (p=0.5), w= is a tolerable margin of error (w=0.05). Using the correction formula with a 10% nonresponse rate, 182 was the final sample size. Stratified with Simple random sampling method was used by using the sampling frame which found from the head of nurses/ matron.

Variables and measurements

The dependent variables were knowledge and practice of wound care and the independent variables included were sociodemographic factors (age, occupation, educational background, marital status and facility-related factors (working area, and training on wound care).

Good Knowledge: participants who answer more than 80% of the knowledge questions correctly.

Moderate knowledge: those study participants who answer 60-79% of the knowledge question correctly.

Poor knowledge: those study participants who answer less than 60% of the knowledge questions correctly.

Good Practice: those study participants who correctly respond to practice questions and score above 80%

Moderate practice: those study participants who correctly respond to practice questions score 60-79%.

Poor Practice: study participants who correctly respond to practice questions score below 60% [37]. Data collection procedure and quality control

The data was collected using self-administered structured questionnaires adopted from different related kinds of literature [38-40] and modified in our context. A questionnaire was prepared in English and translated into the local language, and back to English for consistency. Two nursing staffs were collecting the data and one senior staff was recruited as supervisors and pretest was conducted in Finote Selam hospital on 5% of sample size. The data were checked daily basis for completeness and consistency.

Data processing and analysis

Data were entered and analyzed using SPSS version 23 and descriptive analysis such as percentages, frequency distribution was used. The bi-variable and multi-variable proportional odds model (POM), was fitted to assess factors associated with knowledge and practice of wound healing and care. Chi-square parallel line tests were checked (p-value = 0.46), indicating that the assumption was not violated. Model fitness using the chi-square goodness-of-fit test (p = 0.152) was checked. All variables with a p-value ≤ 0.25 in the bivariable analysis were entered into the multivariable analysis to control the confounding effect. Adjusted proportional odds ratio (POR) with a 95% CI was used to assess the association between explanatory and outcome

variables. Variables with p-values < 0.05 in the multivariable analysis were considered to be statistically significant. The analysis was done by reporting of STROBE statement checklist [41].

Ethical consideration

Ethical clearance was obtained from Bahir Dar University, department of nursing. A formal letter was written to Bahir Dar specialized Hospital and permission was secured from the medical director. All study participants were informed that they have the right not to participate in the study or stop the interview at any time they want if that was their choice. Written consent was obtained from all participants before the interview. All information obtained in the study was stored confidential and secured.

Results

Socio-demographic characteristics of the participants

A total of 182 nurses worked in Felegehiwot comprehensive specialized hospital were participated in the study making a response rate of 100 %. Ninety-six, (52.7%) were females and two-third, (67.6%) of the participants was found within the age range of 20-30. Almost half, (47.8%) of nurse professionals were served from one to five years and 138(75.8%) had a bachelor degree in nursing. Most of the respondents, 132(72.5%) does not get training about wound healing and care (Table 1).

Level of knowledge of nurses regarding wound care

The study had found that 34 (18.7%) of the respondents have a good knowledge and two-fifth, (41.8%) of the nurses had poor knowledge of wound healing and care. The majority 172 (94.5%) knows as immobility, impaired nutrition, and location of the wound are risk factors for wound infection. Similarly, 118(64.8%) knows as wet therapy is the "gold standard" for treating chronic wounds and 127(69.8%) of the respondents know the pain in the wound must be evaluated by the patient than the healthcare providers. One hundred and thirty (71.4%) know the selection of the coverage of the wound should be based on a characteristic of the deathbed. Only half of 100(54.9%) of the respondents have known as the first stage of pressure ulcer is cannot easily identify in people of dark skin and 135 (74.2%) respondents know as irrigation removes debris from wound better than swabbing (Table 2).

Level of the practice of nurses on wound care

This study found, 109 (59.9%) of the respondents had poor and 17(9.3%) of nurses have a good level of practice on wound healing and care (Figure 2). Forty-one (22.5%) of the participants were using the same dressing type for the entire wound healing time usually and almost half (48.9%) nurses change the treatment plan always when the wound fills with granulation tissue and epithelization.

Regarding the wound cleansing, more than half (57.8%) used normal saline always, 79 (43.4%) of nurses used hydrogen peroxide for sometimes and a large proportion (74.2%) were never used water for wound cleansing.

The majority, 62.6% and 61 % of the participants positioning the wound and observing the wound on daily flow, rush, and temperature respectively and above two-thirds (68.1%) of nurses provide suggestions about nutrition for the patient always (Table3). Regarding the predischage education, 144(79.1%) of the participants informing about wound care always, mainly about the food groups for faster wound healing (67.0%) and 119 (65.4%) of them provide education on hygiene to prevent infection on the incision area (Table 4).

Associated factors of the level of knowledge and practice of wound care

In a bivariate proportional ordinal regression sex, working experience in this hospital, the clinical setting in this center and training on wound care was associated with knowledge of the wound care. But in multivariable regression, only working experience and clinical setting in this center was significantly associated with the level of knowledge of nurses on wound care.

Those nurses who have working experience of fewer than 5 years in this hospital has 58% times less likely to have a good knowledge (aPOR 0.42, 95% CI: 1.11, 2.72) than those working years 10 years and above. On the other hand, those working in the surgical setting or ward were five and a half times greater chance of to have a good level of knowledge level (aPOR 5.45, 95 % CI: 1.61, 2.21) and those working in the emergency ward were 74 times less likely (aPOR, 0.26, 95%CI: 0.03,0.18) to have better knowledge than their counterparts.

Age, clinical experience, working experience in this center, clinical setting, training on wound care and level of knowledge in wound care were included in the multivariable ordinal logistic regression. But training and the level of knowledge of wound care were the only remaining significant factors of the practice of wound care. Those nurses who have to get training on wound care were 2 times higher odds of performing the good level of practice of wound healing and care than those who haven't get training (aPOR 1.9, 95% CI: 0.59, 0.87). On the other hand, those women who have a good level of knowledge on wound care were five and a half times greater chance of attaining a good level of practice than their counterparts (aPOR 5.56, 95% CI: 1.08, 2.26).

Discussion

Wound infection the commonest cause of nosocomial infection in healthcare and prevention with proper wound care is important. This study investigated the knowledge and practice of nurses towards wound healing and cares. About the level of nurse's knowledge on wound healing and care, the result of this study showed that 18.7% of the participants had good knowledge but a large proportion (41%) of participants have a poor level of knowledge. This was much lower than the studies conducted in Australia, 34.7% [42] Brazil, 69.4% [38], United Kingdom, 44.1% [43] and France, 28% [44] have good knowledge of wound care in respectively. The possible difference might be due to socio-demographic, clinical the setting, sample size and methodological difference and also the poor quality of care in our setting due to limited resources. Despite, this finding is better than a study done in Nigeria [45], only 6% had good knowledge.

The majority 172(94.5%) of the respondents have good knowledge of the immobility; impaired nutrition, and location of the wound are risk factors for wound infection. This study revealed that wound healing and care practice of nurses was very poor, 9.3%. The result of this study is similar a study done in Nigeria [45]. However,

this is lower than the United Kingdom's finding [43], 40% and Turkey's [39], 50% of nurses have better practice on wound healing and care practice. This discrepancy might be because of socio-demographic, training and knowledge difference on wound care. In this study, it was found that 40.6% of the nurses did not provide pre-discharge education about wound healing regularly on the discharge of the patient, similar to a Turkish study [39]. Hence, patients discharged to home without the required knowledge and skill for care at home leads to physical and psychological stress.

This study revealed that the length of working experience was associated with knowledge of wound care. It showed the lower the year of experience, the lower the level of knowledge. This is supported by another study [43, 46]. This might be since those who have lower years of working experience have lower chance to work with different experienced professionals not learn from their coworker's experience and prevents to gain acquired knowledge of wound care. The clinical setting difference is one of the factors of knowledge of wound healing and care, showed that those working at the surgical ward were more knowledgeable and those working in the emergency department were less knowledgeable. This is supported by a study done in Denmark [47] and the United Kingdom [48], knowledge varies as the role of nurses varies. This might be wound care would be expected to be performed routinely in everyday practice in the surgical ward than others which will increase their knowledge and lack of training for all staff providers and source on another ward might be explained for lower knowledge.

Furthermore, this finding showed that those nurses who have training on wound care have a higher level of practice than their counterparts. This is in line with other studies [43, 49, 50]. The possible explanation for this might be that those who have taken training would be more likely to be knowledgeable with the updated information, leads to the practice of the acquired evidence. Knowledge of wound care was the most predictor of wound healing and care practice, in which those professionals have good knowledge, were more likely to practice based on the recommendations. This is supported by different studies [43, 48, 51, 52]. This might be explained due to that the level of knowledge in the care of patients with wounds can reflect on their practice and influence of the other members of the nursing team, their self-assessment of competence on the wound will be higher when they had increased their wound care knowledge, enhanced their practice of the evidence-based practice of wound care.

Even several extensive have been made to reduce the limitations; the study subjects in this study only included government hospitals and unable to a representative for private hospitals. The cross-sectional nature of this study will make it unable to form a temporal relationship between the outcome and predictor variables. The study is also prone to social desirability bias which could lead to over/underestimation of the study found hence it was self-reporting by the participants.

Conclusions

The knowledge and practice of wound care of nurses were found to be poor. Above two-fifth of nurses doesn't provide pre-discharge education on wound care. For this, provision of a structured preservice and in-service training and education programs on wound healing and care, improve nurses educational level or experience sharing, establish and put in place wound healing and care guideline and assessment tools in hospitals and conduct further qualitative study the level of wound care practice was recommended.

Abbreviations

SPSS Social package Statically Software

APOR Adjusted Proportional Odds Ratio

Declarations

Acknowledgement

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Ethics approval and consent to participate

The study protocol was reviewed and approved by Bahir Dar University Research Ethics Review Committee. The official letter of cooperation was obtained from the College of Medicine and Health Science in Bahir Dar specialized Hospital and permission was secured from the medical director. All study participants were informed that they have a right not to participate in the study or stop the interview at any time they want if that was their choice. Written consent was obtained from all participants before the interview. All information obtained in the study was stored confidential and secured.

Consent to publication: Not applicable.

Availability of data and materials

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interest: the authors declare that they have no competing interests

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Authors' Contributions

MT and EA conceived and designed the study, supervised the data collection, and analyzed the data. MD* assisted in designing the study, reviewed and analyzed the study, and wrote up the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1: Socio demographic characteristics of nurses at tertiary referral hospital, 2018.

Variables	Category	Number	Percent %
Age	20-30	123	67.6%
	31 - 40	44	24.2%
	>40	15	8.2%
Sex	Male	86	47.3%
	Female	96	52.7%
Clinical experience	1-5 yr	87	47.8%
	6-10 yr	65	35.7%
	>10 yr	30	16.5%
Marital status	Married	119	65.4%
	Single	57	31.3%
	Divorced	6	3.2%
Educational status	Diploma	42	23.1%
	Bsc &above	140	76.9%
Training on wound care			
	Yes	50	27.5%
	No	132	72.5%

Yr, year of experience

Table 2: knowledge of nurses regarding to wound care who working at tertiary Ethiopian hospital, 2018.

Variable	Yes No (%)	No No (%)	Don't know No (%)
Immobility, impaired nutrition, and location of the wound are risk factors for wound infection	172(94.5%)	8(4.4%)	2(1.1%)
Wet therapy is the "gold standard" for chronic wounds	118(64.8%)	46(25.3%)	18(9.9%)
wound must be evaluated by the health professional,	54(29.7%)	127(69.8%)	1(0.5%)
Wound care is a cumulative process that comprises observation, data collection and evolution	151(83%)	26(14.3%)	5(2.7%)
signs of infection may not be present in chronic wound	83(83(45.6%)	96(52.7%) 3(1.6)	
Wound coverage should be based on characteristic of deathbed presence of devitalized tissue)	130(71.4%)	39(21.4%)	13(7.1%)
pressure ulcer is easily identified in people of dark skin	79(43.4%)	100(54.9%)	3(1.6%)
Enzymes are effective in the removal of devitalized tissue	114(62.6%)	42(23.1%)	26(14.3%)
PVPI is indicated to clean chronic wounds	40(22%)	83(45.6%)	59(32.4%)
Wet gauze are more indicated for treating chronic wounds	111(61%)	69(37.9)	2(1.1%)
The swab is dipped in wound drainage during culture	142(78%)	31(17%)	9(4.9%)
Nurses are authorized to use conservative debridement	131(72%)	48(26.4%)	3(1.6%)
Braden scale is used to assess the risk of vascular ulcer	119(65.4%)	23(12.6%)	40(22%)
Irrigation removes debris from wound better than swabbing	135(74.2%)	38(20.9%)	9(4.9%)
Recommended pressure for irrigation is 15 psi	86(47.3%)	25(13.7%)	71(39%)

Psi: pounds per square inch

Table 3: Practice of nurses regarding to wound care working at tertiary referral hospital, 2018.

Variable	Always No (%)	Usually No (%)	Sometimes No (%)	Never No (%)
use the same dressing type for the entire wound healing process	38(20.9%)	41(22.5%)	35(19.2%)	68(37.4%)
Treatment plans changes as when wound fills with granulation tissue and epithelization	89(48.9%)	57(31.3%)	28(15.4%)	8(4.4%)
Use foam dressing deep for exuding wounds	79(43.4%)	68(37.4%)	17(9.3%)	18(9.9%)
Hydrogels, hydrocolloid are used	33(18.1%)	41(22.5%)	74(40.7%)	34(18.7%)
Use hydrogen peroxide for wound cleansing	39(21.4%)	47(25.8%)	79(43.4%)	17(9.3%)
Use water for wound cleansing	19(10.4%)	20(11.0%)	8(4.4%)	135(74.2%)
Use normal saline for wound cleansing	105(57.8%)	65(35.7%)	8(4.4%)	4(2.2%)
Positioning suitable for the wound of the patient	114(62.6%)	53(29.1%)	12(6.6%)	3(1.6%)
Determining the localization of the wound	99(54.4%)	59(32.4%)	22(12.1%)	2(1.1%)
Daily observing the wound in terms of flow, rush	111(61.0%)	51(28.0%)	16(8.8%)	4(2.2%)
Evaluating the drains for color	96(52.7%)	66(36.3%)	16(8.8%)	4(2.2%)
Evaluating the drains for amount	79(43.4%)	58(31.9%)	32(17.6%)	13(7.1%)
Evaluating the drains for odor	99(54.4%)	49(26.9%)	29(15.9%)	5(2.7%)
Evaluating the wound area for sensitivity and pain	109(59.9%)	54(29.7%)	17(9.3%)	2(1.1%)
Encouraging the patient for early mobilization	91(50%)	64(35.2%)	16(8.8%)	11(6%)
Providing adequate hydration of the patient	86(47.3%)	61(33.5%)	28(15.4%)	7(3.8%)
Making suggestions about nutrition of the patient	124(68.1%)	48(26.4%)	9(4.9%)	1(0.5%)

Table 4: pre discharge education on wound care at tertiary referral hospital, 2018.

Variable	Always	Usually	Sometimes	Never
	No (%)	No (%)	No (%)	No (%)
Informing about wound care	144(79.1%)	34(18.7%)	2(1.1%)	2(1.1%)
Informing about the time of the suture removed	119(65.4%)	38(20.9%)	24(13.2%)	1(0.5%)
Informing about the time of the body bath	74(40.7%)	57(31.3%)	39(21.4%)	12(6.6%)
Informing about the precautions to prevent constipation	78(42.9%)	67(36.8%)	35(19.2%)	2(1.1%)
Informing about the food groups for faster wound healing	122(67.0%)	49(29.9%)	10(5.5%)	1(0.5%)
Giving hygiene education to prevent infection on the incision area	119(65.4%)	52(28.6%)	9(4.9%)	2(1.1%)
Informing about the medications with negative effects on wound healing	101(55.5%)	47(25.8%)	21(11.5%)	13(7.1%)

Table 5: association factors of on the Level of knowledge of nurses on wound care in Ethiopia, 2018

Variable	Category	Level of knowledge			POR		P-Value
		Good	Moderate	Poor	CPOR[95%CI]	aPOR[95CI]	
Age	20-30	20	46	57	0.71 (0.684,1.32)	-	
	31-40	10	20	14	1.81 (0.95,1.24)	-	
	>40	19	31	36	1.00	-	
Sex	Male	15	41	40	1.9 (0.41,0.68)	-	
	Female	15	41	40	1.00		
Clinical experience	1mon-5 yr	14	36	37	0.26 (0.55,1.00)	-	
	6-10 yr	13	23	29	0.45 (0.42,1.20)	-	
	> 10 yr	7	13	10	1.00		
Marital status	Married	18	52	49	2.98(0.48, 1.58)	-	
	Single	14	18	25	1.15(0.33,1.82)	-	
	Divorced	2	2	2	1.00		
Educational status	Diploma	6	17	19	0.25(0.57, 1.72)	-	
	Bsc& above	28	55	57	1.00		
Working experience in this center	< 5 yr	26	48	63	0.57 (0.33, 0.82)*	0.42 (0.11, 0.99)*	0.03**
	5-10 yr	5	20	11	1.9 (0.23,1.54)	4.78 (0.38,2.45)	0.15
	> 10 yr	3	4	2	1.00	1.00	
Clinical setting	Surgical	5	17	33	5.23 (1.69, 1.85)*	5.45 (1.61,2.21)	0.001*
	Orthopedics	4	15	16	0.84(0.13, 1.54)*	1.15 (0.09,1.61)	0.08
	Medical	2	11	8	0.08 (0.45, 1.49)	0.16 (0.52,1.45)	0.36
	Emergency	12	9	5	0.5 (0.01, 1.82)*	0.26 (0.03,0.18)*	0.04*
	Others	11	20	14	1.00	1.00	

Training on wound care	Yes	5	26	19	1.85 (.130,1.097)*	12.5 (0.16,1.18)	0.13
	No	29	46	57	1.00	1.00	

*Statistical significance at p value < 0.25 in bivariate and < 0.05 in multivariable analysis.

Others- Obs/gyn, Urology, Neurology, Geriatrics, Nephrology, Hematology and Pediatrics

Table 6: Associated factors of the Level of practice of nurses on wound care in Ethiopia, 2018

Variable	Category	Level of practice			CPOR[95%CI]	aPOR[95%CI]	P-Value
		Good	Moderate	Poor			
Age	20-30	10	40	73	1.27 (0.23, 1.79)*	1.09(0.96,1.44)	0.75
	31-40	3	12	29	3.48 (0.08,2.19)*	0.45(0.85,2.19)	0.38
	>40	4	4	7	1.00	1.00	
Sex	Male	7	26	53	0.73 (0.43,1.74)	-	
	Female	10	30	56	1.00	-	
Marital status	Married	7	33	79	3.81 (0.40,2.69)*		
	Single	8	22	27	0.66(1.23, 1.92)		
	Divorced	2	1	3	1.00	1.00	
Educational status	Diploma	6	11	25	5.12 (0.8,1.54)	-	
	BSc &above	11	45	84	1.00		
Clinical experience	1-5 yr	5	27	55	0.12(0.28,1.34)*	1.9 (0.56,2.32)	0.23
	6 -10 yr	7	20	38	0.94 (0.56, 1.12)	2.75(0.24,1.36)	0.92
	> 10 yr	5	9	16	1.00	1.00	
Working experience in this center	< 5 yr	15	42	80	0.2 (0.83, 1.73)	0.75(0.11,1.75)	0.66
	5-10 yr	1	10	25	4.62 (0.43, 2.43)*	4.54 (1.05,2.81)*	0.01*
	> 10 yr	1	4	4	1.00	1.00	
Clinical setting	Surgical	2	18	35	0.7 (0.1,1.46)*	0.08 (0.35,1.41)	0.24
	Orthopedics	2	8	25	3.48 (0.06, 1.89)*	1.99 (0.1,1.87)	0.08
	Medical	2	5	14	0.9(0.34, 1.76)*	0.36 (0.74,1.58)	0.48
	Emergency	3	11	12	2.12 (0.87, 0.96)	2.75 (0.93,1.14)	0.89
	Others	8	14	23	1.00	1.00	

Training on wound care	Yes	6	13	31	1.97 (0.03,0.53)*	1.9 (0.59, 0.87)	0.025*
	No	11	43	78	1.00	1.00	
Level of knowledge	Good	10	12	12	6.45(0.64, 2.23)*	5.56 (1.08,2,26)*	0.003*
	Moderate	4	19	49	2.43 (0.51, 0.85)	2.75 (0.66,1.76)	0.87
	Poor	3	25	48	1.00	1.00	

*Statistical significance at p value < 0.05, Mon- month

Figures

Figure 1

Schematic presentation of sampling procedure on knowledge and practice of nurses towards wound care in Felege Hiwot specialized Hospital, Ethiopia, 2018

Figure 1

Schematic presentation of sampling procedure on knowledge and practice of nurses towards wound care in Felege Hiwot specialized Hospital, Ethiopia, 2018

Figure 2

Practice level of nurses regarding to wound healing and care in FHCSH

Figure 2

Practice level of nurses regarding to wound healing and care in FHCSH

Supplementary Files

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