Original Article

Knowledge and Practices of the Intern Nursing Students on Wound Care

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Abstract

Aim: The research was administered to determine the knowledge and practices of intern nursing students on wound care.
Method: The study was conducted with 224 students who were enrolled in the nursing department of a faculty and volunteered to join the study. The survey prepared by the researchers was used. First part of the survey was assessed with 100 points. Second part of the survey which were prepared in Likert type was evaluated by giving number and percent. Descriptive statistics, one way variance, student t test, Mann Witney U test were used.
Results: 84.4% of the students were women, 60.7% chose the occupation voluntarily and 43.3% were surgical interns. The average score of the students' wound care knowledge was 64.8 ± 11.27. The average scores of whom with prior wound care experience were over than others. Nearly half of students regularly perform for wound care practices, but more than half didn't perform regular discharge training.
Conclusion: As a result, it was found that the knowledge and applications of intern students about surgical wound healing weren't sufficient. It is advised that students participate in case presenting surgical internship process, take part in wound care in hospitals and educations on this topic.

Key words: Nursing, Surgical intern, Wound, Care

Introduction

Surgical interventions are an indispensable component of the healthcare system, which is necessary to manage many health problems. The number of surgeries is increasing rapidly due to the advancement of technology, the development of surgical techniques, and the need for surgical care in the treatment of almost all diseases (Weiser et al.,2016; Weiser et al., 2008). As with all invasive procedures, surgical interventions that are becoming more frequently applied bring some problems with it. These problems include pain, fatigue, atelectasis, paralytic ileus, urinary infection, wound infection, wound dehiscence. Surgery-related wound problems are one of the problems that challenge the healthcare team (Dal et al., 2012; Jhanji & Pearse, 2009). Surgical wounds include occur after any surgical procedure (Vuolo, 2006). Wound healing, which has an important role in the healing, is postponed, If the required conditions for the healing of the surgical wound are not met and the wound is not properly cared (Hodgetts et al., 2013; Ozaydın & Ozaydın, 2010). Wound problems that develop due to surgical intervention prolong the hospitalization period of the patient, cause sequelae such as incisional

hernia as a result of bad scar formation and wound dehiscence, and increase the cost rates (Capasso et al., 2009; Kartoglu, 2008). The negative effects of the wound on both the physical and psychological health of the patients and the burden of the cost on the healthcare providers reveal the importance of proper diagnosis and treatment. For this reason, whole surgical wounds entail specific nursing care both in the clinic and after discharge (Kartoglu, 2008)

The healing process of the surgical wound requires a collaborative team approach (Vuolo, 2006). Nurses are one of the most important members of this multidisciplinary team. In a literature review on wound management team, when looking at the roles of healthcare personnel in studies on wound, it is seen that the team members consisted of nurses with a rate of 29% (Moore et al., 2014).

Successful nursing care in surgical wounds depends on the nurse's knowledge of normal wound healing physiology and putting this knowledge into wound care practice (Do et al., 2020; Vuolo, 2006). Therefore, improving nurses' knowledge and attitudes towards evidence-based wound care practice may be closely related to changes in practice (Do et al., 2020).

In order to provide effective wound care in clinical practice, courses on wound care and management should be included in the nursing education curriculum. During undergraduate education, students are given training on wound care, and discussions on wound healing and affecting factors and wound care are held with students who receive surgical internship. However, little is known about the knowledge and skills of intern nurses in wound care, both from formal evidence and training, and from knowledge gained from experiential learning and clinical practice (Welsh, 2018). For this reason, this research was administered to determine the knowledge and practices of intern students on surgical wound care.

Material And Methods

Design Of The Study

The study was conducted descriptively and cross-sectionally in order to determine the knowledge and practices of intern students on surgical wound care.

Setting and Sample: The universe of the study consisted of 350 students studying in the last year of the nursing department of a university. Sample selection was not made in the study, and 224 students who agreed to take part in the research were added. The adequacy of the sample was decided based on poshoc power analysis. The effect size was obtained as 0.248 by using mean differences and standart deviation in Surme et al. (2018)'s study. When the type I error was taken as 5% and the sample size as 224, the posterior power of the study was calculated as 98 %.

Data collection forms

***Descriptive Information Form*:** The questionnaire form used to collect the data consists of 9 questions about the students' socio-demographic characteristics (age, gender, place of residence, etc.).

Wound care form: The form developed by Surme et al. (2018) consists of 2 parts. In the first part, there are 20 questions about surgical wound healing and each question is 5 points and it is evaluated over 100 points in total. In the second part of the form, there are 11 expressions in 4-likert type (always, mostly, sometimes, never) that determine the frequency of wound healing practices and 10 statements that determine the frequency of discharge training practices. The Cronbach alpha coefficient of the form was found to be 0.892. In the current study Cronbach alpha coefficient was found to be 0.967.

Ethical Consideration: University social and humanities ethics committee approval, institutional permission from the institution where the study was made, and verbal and written consent from the students participating in the study were obtained.

Data Analysis: Data were analyzed by SPSS 24.0 (IBM Corp., Armonk, NY, USA). Shapiro-Wilk test and Q-Q graphs were used to determine whether the numerical data were suitable for normal distribution. Data with normal distribution were evaluated with one way variance, student t test to compare two or more groups. Posthoc Tukey HSD analysis was used. In all results, $p < 0.05$ was considered statistically significant and and all tests were 2-tailed.To investigate the construct validity of the survey, the principal components test was conducted over the whole data in the research. Results (Kaiser-Meyer- Olkin= 0.951; X2 = 4404.2222;

P= 0.000) indicated that the data was suitable for the factor analysis. Then, the data were examined by principal components analysis. There were two factors with an eigenvalue higher than 1.00. The factors are subdivided as follows: wound care practices and discharge education. The total variance and eigenvalue subtracted were 36.031% and 12.39% for the first factor and 70.71% and 1.75 for the second factor, respectively.

Results

In the research, it was found that 84.4% of the intern nurses were female, 72.8% were 22-23 years old, and 66.5% lived in the city center. In addition, it was found that 60.7% of the students chose the nursing profession willingly, 43.3% of them took the surgical internship (Table 1). It was determined that 29.5% of the students had wound care experience and 17.9% of them applied wound care to the patients in the clinic. It was found that 84.8% of the students wanted to receive a comprehensive wound care training.

In the study, it was found that the students' gender, willingly choosing the nursing profession did not affect their wound healing knowledge scores (p> 0.05). It was determined that the wound healing knowledge scores of the students who received surgical internship were higher than those who did not receive surgical internship (p> 0.05). In addition, it was determined that the wound care knowledge scores of students with prior wound care experience were statistically significantly higher (p <0.05). (Table 2)

Nursing students declared that they every time did the following applications: observing the wound daily for redness, discharge and fever (49.6%); assessment the drains in terms of color (54.5%), amount (49.6%), and odor (41.5%); and assessment the wound site for sensitivity and pain (49.1%). Nearly half of nursing students stated that they always encourage the patient to early mobilization and making recommendations about the patient's nutrition (Table 3).

Less than half of the intern nurses declared that they every time carried out following discharge training applications: education about wound care (42.4%), give information about when to remove sutures (34.8%), when to take a body bath (37.9%), the measures to be taken to prevent constipation (44.6%), food groups that can accelerate wound healing (41.1%), not being exposed to wound site trauma (42.9%), providing hygiene training to prevent infection (43.8%), give information about drugs that negatively affect wound healing (30.8%), and education about the situations to contanct to hospital (45.1%). In Addition approximately half of the students declared that they always support the wound area for situations such as cough, sneezing and vomiting. (43.4%) (Table 4).

Table 5 shows that the questionnaire has a two-factor structure: wound care practices and discharge training.

Table 1. Descriptive characteristics of the intern students

Descriptive Characteristics	N	%
Gender		
Female	189	84.4
Male	35	15.6
Age		
20-21	42	21.0
22-23	163	72.8
24 and older	14	6.3

Living place		
City center	149	66.5
District center	47	21.0
Town / village	28	12.5
Choosing the profession willingly		
Yes	136	60.7
No	88	39.3
Receiving surgical internship		
Yes	97	43.3
No	127	56.7
Wound care experience		
Yes	66	29.5
No	158	70.5

Table 2. Distribution of wound care knowledge scores according to students' descriptive characteristics

Descriptive Characteristics	**Mean±SD**
Gender	
Female	64.55±11.45
Male	66.42±10.25
Test*	*p*=0.368, t=0.902
Age	
20-21	68.19±10.60[a]
22-23	63.80±11.15[b]
24 and older	65.78±13.36[ab]
Test**	***p*=0.059, F=2.861**
Wound care experience	
Yes	67.12 ±11.19
No	63.89±11.20
Test*	***p*=0.051, t=0.962**
Receiving surgical internship	**Median (min-max)**

Yes	70.00 (20-90)
No	65.00 (30-85)
Test***	*p*=0.100, Z=1.647
Choosing the profession willingly	
Yes	65.00 (20-90)
No	70.00 (30-85)
Test***	*p*=0.376, Z=0.885

* Student t test was used.** One-way analysis of variance was used.*** Man Withney U test was used.

Table 3. Frequency of wound care applications of the nursing students (N=224)

	Always		Mostly		Sometimes		Never	
Wound Care Applications	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Proper positioning for the patient's wound	110	49.1	87	38.8	26	11.6	1	0.4
Stating the localization of the wound	108	48.2	81	36.2	34	15.2	1	0.4
Observing the wound daily for redness, discharge and fewer	111	49.6	78	34.8	32	14.3	3	1.3
Assessment the drains in terms of color	122	54.5	72	32.1	29	12.9	1	0.4
Assessment the drains in terms of amount	111	49.6	74	33.0	34	15.2	5	2.2
Assessment the drains in terms of odor	93	41.5	64	28.6	53	23.7	14	6.3
Assessment the wound site in terms of sensitivity and pain	110	49.1	76	33.9	35	15.6	3	1.3
Encourage the patient to early mobilization after surgery	101	45.1	81	36.2	38	17.0	4	1.8
Ensuring sufficient hydration of the patient	106	47.3	85	37.9	29	12.9	4	1.8
Making recommendations about the patient's nutrition	100	44.6	81	36.2	37	16.5	6	2.7

Table 4. Frequency of discharge education applications of the nursing students about wound care (N=224)

Discharge Education Applications	Always		Mostly		Sometimes		Never	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Education about wound care	95	42.4	86	38.4	38	17.0	5	2.2
Give information about when to remove sutures	78	34.8	82	36.6	54	24.1	10	4.5
Give information about when to take a body bath	85	37.9	85	37.9	45	20.1	9	4.0
Education about the measures to be taken to prevent constipation	100	44.6	83	37.1	35	15.6	6	2.7

Give information about food groups that can accelerate wound healing	92	41.1	89	39.7	35	15.6	8	3.6
Providing hygiene training to prevent infection of the surgical wound	98	43.8	83	37.1	37	16.5	6	2.7
Give information about not being exposed to wound site trauma	96	42.9	89	39.7	33	14.7	6	2.7
Give information about supporting the wound site in cases of cough, sneezing and vomiting	111	49.6	74	33.0	34	15.2	5	2.2
Give information about drugs that negatively affect wound healing	69	30.8	80	35.7	60	26.8	15	6.7
Education about the situations to contanct to hospital	101	45.1	79	35.3	38	17.0	6	2.7

Table 5. Items of the survey and principal component analysis and factor loadings obtained by varimax rotation method

Items	**First Factor**	**Second Factor**
	Wound Care Applications	**Discharge Education Applications**
1. Proper positioning for the patient's wound	0.756	0.363
2. Stating the localization of the wound	0.806	
3. Observing the wound daily for redness, discharge and fewer	0.757	
4. Assessment the drains in terms of color	0.792	
5. Assessment the drains in terms of amount	0.740	
6. Assessment the drains in terms of odor	0.504	0.462
7. Assessment the wound site for sensitivity and pain	0.760	
8. Encourage the patient to early mobilization after surgery	0.793	
9. Ensuring sufficient hydration of the patient	0.805	
10. Making recommendations about the patient's nutrition	0.691	0.379
11. Education about wound care		0.765
12. Give information about when to remove sutures		0.824
13. Give information about when to take a body bath		0.824
14. Education about the measures to be taken to prevent constipation		0.757
15. Give information about food groups that can accelerate wound healing		0.743
16. Providing hygiene training to prevent infection of the surgical wound		0.750
17. Give information about not being exposed to wound site trauma		0.734
18. Give information about supporting the wound site in cases of cough, sneezing and vomiting	0.466	0.689

19. Give information about drugs that negatively affect wound healing		0.804
20. Education about the situations to contanct to hospital		0.784
Eigenvalue	12.392	1.751
Variance extracted, %	61.96	8.75
Total variance extracted, %	36.03	70.71

Discussion

The wound healing process is complex. For a quality wound healing process, tissue repair and physiology, appropriate products and interventions to support the quality of wound care should be known (Lucas & King, 2010; Welsh, 2018). It is stated that younger and less experienced student nurses have less wound care competencies compared to graduate nurses (Ayello et al., 2005; Mccluskey & Mccarthy, 2012). In a study conducted by Surme et al. (2018), the average score of graduate nurses wound care knowledge was 62.0 ±8.4. In the current study it was found that the average score of intern students wound care knowledge was 64.84±11.27. This may be due to the student nurses' wound care knowledge is more up-to-date and fresh than graduate nurses. Lack of standardization in wound education and the variety /complexity of wound aetiology and treatments are presented as possible explanations.Considering that nursing is a practice-based profession, it is known that clinical teaching constitutes an important part of nursing education and complements theoretical education (Gul et al., 2019). In line with the literature knowledge, in our study, it was detected that the wound care knowledge of intern students who had prior wound care experience, was statistically significantly higher than who had not. It is thought that learning by doing and applying is more permanent and more effective in increasing the level of knowledge.

In this study, while the intern nurses always assessment the drains in terms of amount (54.5%) and color (49.6%), only 41.5% of them always evaluated in terms of odor. Changes in odor in drains or wound area indicate a problem with wound healing (Munter et al., 2018) therefore, nurses should always analysis the drains and wound area in terms of odor. In addition, it is thought that intern nurses in clinics have a higher rate of evaluating drains in terms of amount because they follow up the patient's fluid balance.

In a study, it was determined that 73.1% of the patients after surgery experienced pain in the wound area (İzveren & Dal, 2011). In pain management, it is extremely important for nurses to define, monitor, evaluate, report on time, and monitor the side effects of the applications (Eti Aslan et al., 2018). In our research, it was stated that approximately half of the intern students (49.1%) always assessed the wound site for sensitivity and pain and gave the wound an appropriate position. A comprehensive wound evaluation is considered important to determine appropriate wound management and pain management caused by the wound.

In the current study, nearly half of the (49.6 %) intern nurses always observing the wound daily for redness, discharge and fewer. In a study, Surme et al. (2018), 57.9% of the graduate nurses every time observing the wound every day for redness, discharge and fewer. The higher rate of graduate nurses observing the wound area for redness, discharge and fewer can be associated with their awareness and experience more than intern nurses. Discharge planning and discharge education of patients and their relatives are among the primary responsibilities of nursing (Luther et al., 2019). In our study, it was determined that most of the intern nurses did not always perform discharge education. However, discharge education is an important nursing practice that prevents re-hospitalizations. In a qualitative study, surgical patients stated that the discharge training given to them provided convenience and strength to take on the responsibilities of their medical care (Horstman et al.,2017). Therefore, it is thought that awareness of intern nurses should be increased about the importance of discharge education related to wound care.

Conclusion and Recommendations: As a result, it was determined that intern nurses had deficiencies in wound care knowledge and did

not adequately practice discharge education. Based on the findings of the research, it is recommended that intern nurses should be given theoretical and practical wound care training, evaluate the effectiveness of the training and actively participate in wound care in the clinic. In addition, awareness about wound care can be created in intern nurses who may be future surgical nurses.

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