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Practice of Surgical Dressing among Health Care Workers at a Teaching Hospital, Chitwan

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Abstract

Introduction: With growing concern over antimicrobial resistance and nosocomial infections, wound dressing techniques are required to prevent infection and shorten the healing time after surgery. Implementing a surgical wound dressing checklist can prevent surgical site infections and enhance healthcare professionals' practices related to surgical wound dressing. This study aims to identify the practice of surgical dressing among health care workers at a teaching hospital, Chitwan.

Methods: A descriptive observation study was conducted at a Teaching Hospital in Chitwan. Using non-probability convenience sampling, 50 health care workers practicing surgical dressing from the Surgery, Gynaecology/Obstetrics, Neurosurgery, and Orthopaedic wards were selected as a sample. Data were collected using an observation checklist. Ethical approval was obtained from the Institutional Review Committee of Chitwan Medical College (IRC-CMC) with Ref. No. 198. Data analysis was performed using the Statistical Package for the Social Sciences (SPSS).

Results: The study revealed that only 28% of the health care workers had good practice (≥ 90% of total score without missing critical steps). There was significant association between working unit and level of practice of surgical dressing (p=0.005).

Conclusion: Majority of health care workers have poor practice of surgical dressing. Hence, there is need to provide in-service training for health care workers to enhance their skills. Further, procedure manual related to dressing should be made available in all wards.

Keywords: Health care workers, surgery, surgical dressing

Introduction

A surgical wound is an injury produced by an incision made with a scalpel or another sharp instrument, subsequently closed in the operating room using sutures, staples, adhesive tape, or glue, resulting in the skin edges being brought closely together.[1] The incidence of surgical site infection was 12.3% in contaminated wounds, compared to clean wounds that was 4.6% .[2]

With growing concern over antimicrobial resistance and nosocomial infections, wound dressing techniques are required to prevent infection and shorten the healing time after surgery[3]

Implementing a surgical wound dressing checklist can prevent surgical site infections and enhance healthcare professionals' practices related to surgical wound dressing.[4-7]

This study aims to identify practice of Surgical Dressing among Health Care Workers at a Teaching Hospital, Chitwan. The finding of the study will be helpful for the hospital administration to plan for in-service education and training program related to surgical dressing.

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Methods

A descriptive observation study was done to find out the Practice of Surgical Dressing among health care workers. This is a single center cross-sectional study conducted in Chitwan Medical College Teaching Hospital (CMCTH). The study duration was from October 2021 to May 2022. Ethical approval was obtained from the Institutional Review Committee (IRC) of CMC with Ref. No. 198. Registered nurses and residents working at Surgery, Gynaecology/ Obstetrics, Neurosurgery and Orthopedic ward of CMCTH practicing surgical dressing were included in this study. Ward in-charge of selected units, Medical officer, Consultants, Head of Departments were excluded from this study. Non probability convenience sampling technique was used to select 50 samples from the study population.

Data were collected from 2078/08/26 (12th December 2021) to 2078/09/10 (25th December 2021).The researcher observed the practice of surgical dressing as participatory technique. The practice of 3-4 respondents per day was observed using observation checklist. At first, the researcher observed the dressing practice of health care worker of particular ward and code number was given to each respondents. After completion of observation, verbal consent was taken from each health care worker and self-administered questionnaire for socio-demographic and profession information was given to them. Confidentiality was maintained by not disclosing the information with others.

The observation checklist was developed for assessing practice of surgical dressing based on literature, books, dressing protocol and consultation with experts. Self-administered questionnaire was developed for identifying socio-demographic and professional information.

Research Instruments consisted of three parts:

Part I: Question related to socio-demographic information

Part II: Question related to professional information

Part III: Observation checklist related to practice of surgical dressing. It had 3 main domains including total 13 statements with 5 critical steps i.e. Before procedure (2 statements), During procedure (9 statements with 5 critical steps), After procedure (2 statements).

Data entry and analysis were performed using IBM SPSS 20.0. The data was analyzed by using descriptive statistics (frequency, percentage, and median) and inferential statistics (chi square test). The findings of the study were presented and interpreted in tables.

Results

Most respondents (52%) were age group of less than 24 years, and the majorities (68%) were unmarried. Sixty-two percent of respondents had completed PCL nursing, and 74% were staff nurse. About 66% had work experience of 24 months and more, with 32% working in the Gynaecology/ Obstetrics unit. Nearly all (92%) reported that a procedure manual for dressing was unavailable in their respective wards.

Table 1: Respondents' Socio-demographic and Professional Information n=50

Variables	Number	Percentage
Age(in completed years)		
<24	26	52.0
≥24	24	48.0
Median=24, IQR=5, Q3=27, Q1=22,- Max=40, Min=21		
Marital status		
Married	16	32.0
Unmarried	34	68.0
Professional qualification		
PCL nursing	31	62.0
BNS	4	8.0
BSc nursing	7	14.0
MBBS	8	16.0
Professional designation		
Senior staff nurse	5	10.0
Staff nurse	37	74.0
Resident	8	16.0
Work experience(in month)		
<24	17	34.0
≥24	33	66.0
Median=24, IQR=27, Q3=36, Q1=9,- Max=84, Min=0.10		
Working unit		
Surgery	13	26.0
Gynaecology/Obstetrics	16	32.0
Neurosurgery	11	22.0
Orthopedic	10	20.0
Procedure manual		
Available	4	8.0
Not available	46	92.0

Before procedure, the majority of respondents (78%) maintained patient's privacy. During the procedure, regarding critical steps; 92% of the respondents used aseptic technique when opening the dressing set, and all (100%) respondents poured sterile cleansing solution on kidney tray without contaminating the sterile field. Additionally, 76% wore sterile gloves without contaminating them. Almost all (98%) respondents cleaned the wound

from least contaminated to the most contaminated area. Seventy six percent of the respondents cleaned the wound from top to bottom or center to the periphery. After the procedure, equal number (92%) of the respondents disposed used supplies and performed hand washing.

Table 2: Respondents' Practice of Surgical Dressing n=50

Statement	Correct Response	
	Number	Percentage
Before procedure		
Maintain patient's privacy	39	78.0
Maintain hand hygiene	32	64.0
During procedure		
Wear clean gloves to remove the old dressing	26	52.0
Opens sterile dressing set using aseptic techniques*	46	92.0
Pour sterile cleansing solution on kidney tray without contaminating sterile field*	50	100.0
Wears sterile gloves without contaminating them*	38	76.0
Uses sterile cotton or gauze to clean the wound from least contaminated to most contaminated area*	49	98.0
Clean the wound from top to bottom or center to the periphery*	38	76.0
Uses separate swab for each stroke and discard each swab after use	49	98.0
Dry the surrounding skin with dry sterile gauze	47	94.0
Secure dressing with tape or bandages approximately	48	96.0
After procedure		
Dispose used supplies	46	92.0
Perform hand washing	46	92.0

* Critical steps

Out of 50 respondents, only 28% had good practice whereas 72% had poor practice of Surgical Dressing.

Table 3: Respondents' Level of Practice of Surgical Dressing

Level of Practice	Number	Percentage
Good (≥90% without missing critical steps)	14	28.0
Poor (<90% with or without missing critical steps)	36	72.0
Total	50	100.0

The level of practice on surgical dressing was statistically significant with working unit of respondents (p=0.005).

Table 4: Association of Respondent's Level of Practice of Surgical Dressing with Selected Profession related Variables n=50

Variables	Level of Practice		x^2	p value
	Good No. (%)	Poor No. (%)		
Professional qualification				
Proficiency Certificate Level	10(32.3)	21(67.7)	0.734	0.392
Bachelor Level (BNS, BSc nursing, MBBS)	4(21.1)	15(78.9)		
Professional designation				
Nurse (senior staff nurse, staff nurse)	13(31.0)	29(69.0)	-	0.414 [f]
Resident	1(12.5)	7(87.5)		
Work experience (in month)				
<24	3(17.6)	14(82.4)	-	0.327 [f]
≥24	11(33.3)	22(66.7)		
Working unit				
Surgery (Surgery, Neurosurgery, Orthopedic)	5(14.7)	29(85.3)	-	0.005 [f]
Gynaecology/Obstetrics	9(56.2)	7(43.8)		
Procedure manual				
Available	2(50)	2(50)	-	0.310 [f]
Not available	12(26.1)	34(73.9)		

Significance level <0.05 [f] = Fisher exact test $_{x}^{2}$ is computed for p value

Discussions

The study showed that the majority of respondents (78%) maintained patient privacy, which aligns with a study conducted in Nigeria.[8] However, it contrasts with another study conducted in Ethiopia.[9]

In this study, 64% of the respondents maintained hand hygiene before dressing procedure, which was similar to findings from other studies conducted at tertiary care teaching hospitals in India.[10,4] but contradicts findings from another study in Ethiopia.[9]

During the procedure, 52% wore clean gloves to remove the old dressing. This result is consistent with a study that reported 68.3% of respondents used disposable gloves for similar tasks.[9] However, another study from India showed contrasting results.[10] Regarding critical steps; 92% of respondents used aseptic technique to open sterile dressing set. The finding is supported by a study where all respondents employed aseptic techniques for this task[4] whereas another study showed differing results.[10] All respondents managed to pour sterile cleansing solution onto a kidney tray without introducing contamination to the sterile field, which was inconsistent with a study done in Ethiopia.[9] Majority of the respondents wore sterile gloves without contaminating them which was similar to a study conducted at tertiary care teaching hospital in India.[1]

Furthermore, 98% of respondents used sterile cotton or gauze to clean wounds, moving from the least contaminated to the most contaminated area, 76% cleaned the wound from top to bottom or center to periphery, while 98% used a separate swab for each stroke. This finding differs with another study.[10]

In this study, 94% of respondents used dry sterile gauze to dry the surrounding skin, which is inconsistent findings of a study where only 61.9% used dry sterile gauze to dry wounds[9] Similarly, 96% of respondents effectively secured dressings with tape or bandages. This result aligns with a study, where 85.3% of participants appropriately applied tape over dressings.[9]

In the current study, almost all respondents properly disposed used supplies which was supported by finding of a previous study.[10] In contrast, another study reported that only 22.4% of participants disposed or returned used supplies.[9] After the procedure; 92% of the respondents performed hand washing which contrasts with other studies conducted in Ethiopia and India.[10,9]

Regarding level of practice among health care workers, only 28% of respondents had good practice (≥90% of the total score without missing critical steps). In this study, there is significant association between the working unit and level of practice of surgical dressing (p=0.005).

There was some limitation to this study. The study was conducted among health care workers working in Surgery, Gynaecology/Obstetrics, Neurosurgery and Orthopedic

ward of CMCTH. Therefore, it cannot be generalized to other settings.

Conclusion

Only two fifth of health care workers had good practice of surgical dressing. This study concludes that there is a need for healthcare workers to improve their competence in performing surgical dressings to ensure better wound healing outcomes. Therefore, providing in-service training to healthcare workers is essential to enhance their skills. Additionally, procedure manuals related to dressing should be made available in all wards.

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