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## A descriptive study to assess the competency regarding surgical wound dressing through OSCE method among B.Sc. nursing 2<sup>nd</sup> year students of era college of nursing Lucknow

**Firoz Zahra and Babita Bisht**

### Abstract

**Introduction:** A wound is an injury that causes either an internal or external break in the body tissue. Surgical wound is a clean incise wound made by surgeon during any operation. Dressings are important component of post-operative wound management. A good dressing should maintain a moist wound environment and thus promote wound healing, be able to remove excessive exudates that might lead to maceration of the wound, provide a good barrier against bacterial or fluid contamination. Worldwide, an estimated 4511 operations per 100,000 populations occur annually, equating to 1 surgical procedure each year for every 22 people. Surgical wounds are the most common wounds managed in acute care settings and are associated with a variety of complications such as bleeding and dehiscence. However surgical site infections are the most common complication—and they are also the most preventable hospital acquired infection.

**Methodology:** The Non - experimental descriptive research design was used on 64 B.Sc. nursing 2<sup>nd</sup> year students of Era college of nursing Lucknow fulfilling the inclusion criteria were included in the study. The purposive sampling technique was used. Socio- Demographic profile was used to collect personal information of subjects and self-structured questionnaire and observational checklist method was used to assess the competency regarding surgical wound dressing through OSCE method among B.Sc. nursing 2<sup>nd</sup> year students of Era college of nursing, Lucknow. There were 12 stations and it was divided into knowledge station and skills station (4 knowledge stations, 8 skills stations). The stations were developed to contain their respective evaluation criteria. And in each station evaluator was present. The data was collected by evaluator in each station. Each student completed a 12th station circuits. 12 students entered at the same time, and each of them went to a different station. They took until they completed a circuit. Each station lasted 6 minutes: one minute to read the purpose of the station, and five minutes to perform the task proposed. The students had to remain in the station for a total of 5 minutes, even if they completed the task in a shorter time. A sound alert went off to mark these time intervals and for continuity of the circuits. Same steps were followed for total samples. The privacy was maintained by screen in each station. The data was analysed using descriptive and inferential statistics.

**Results:** Based on the collected data B.Sc. nursing 2<sup>nd</sup> year students have competency (good knowledge (76.6%) and good skills (95.3%)) regarding surgical wound dressing. And there was negative correlation between level of knowledge and skills regarding surgical wound dressing ( $r = -0.093$ ) which was statistically non-significant. The association between selected demographic variables and level of knowledge and skills statistically there was no significant association between the demographic variables of age, gender, marital status or previous knowledge  $p < 0.05$ .

**Conclusion:** The following conclusions were made on the basis of the finding of the study: The level of knowledge was good knowledge (76%), average knowledge (23.4%), poor knowledge (0.0%) and for skill was good skills (95.3%), average skills (4.7%), and poor skills (0.0%). Hence B.Sc. nursing 2<sup>nd</sup> year students have competency regarding surgical wound dressing.

**Keywords:** Competency, surgical wound dressing, OSCE method

### Introduction

**Background of the study:** The skin is the largest organ in the body and has a surface area of about 1.5 to 2m<sup>2</sup> in adults and it includes glands, hair and nails. There are two main layers the epidermis and dermis [1].

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The skin, the body's first line of defence, protecting the underlying structure from invasion by organisms. Maintaining an intact skin surface is important because a break or disruption in this integrity is potentially dangerous and possibly life [2].

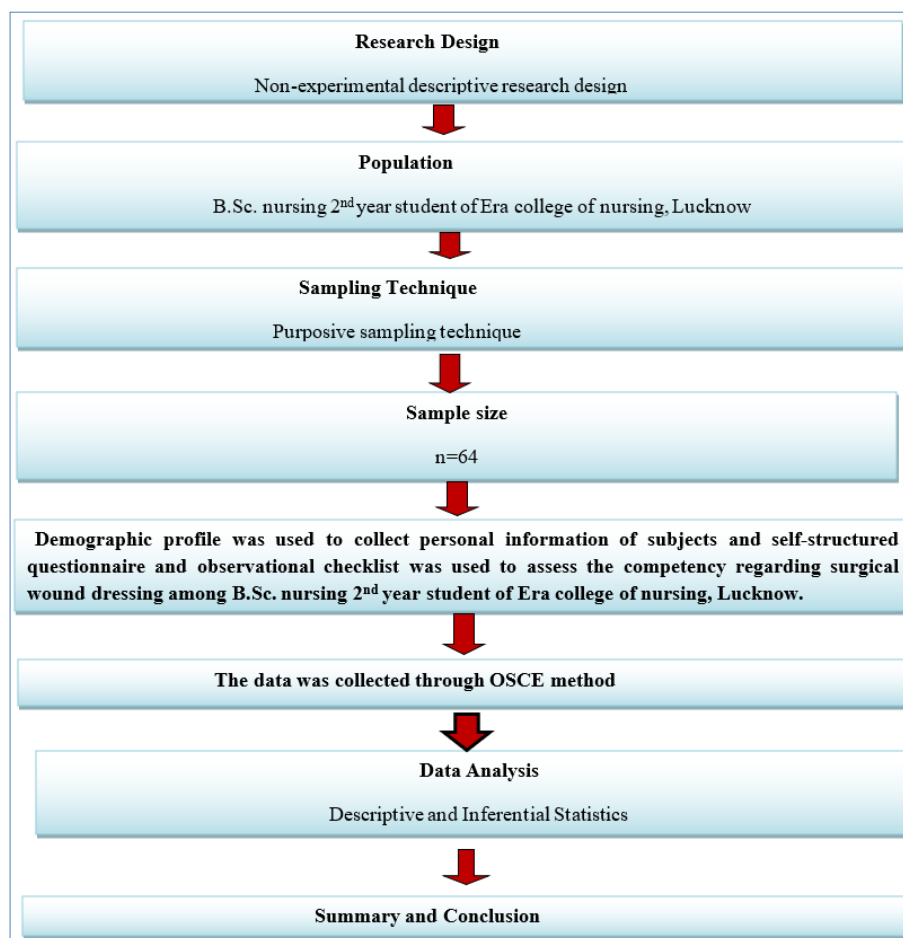
A wound is an injury that causes either an internal or external break in the body tissue. Surgical wound is a clean incise wound made by surgeon during any operation [3].

Dressings are important component of post-operative wound management. A good dressing should maintain a moist wound environment and thus promote wound healing, be able to remove excessive exudates that might lead to maceration of the wound, provide a good barrier against bacterial or fluid contamination [4].

Worldwide, an estimated 4511 operations per 100,000 populations occur annually, equating to 1 surgical procedure

each year for every 22 people. Surgical wounds are the most common wounds managed in acute care settings and are associated with a variety of complications such as bleeding and dehiscence. However surgical site infections are the most common complication—and they are also the most preventable hospital acquired infection [5].

Surgical site infections (SSIs) are one of the important complications after surgery that can cause undesired patient outcomes. SSI is a type of wound infection which occurs after a surgical operation. SSIs have been shown to consist up to 20% of all of healthcare-related infections. At least 5% of patients undergoing a surgical procedure develop a surgical site infection although some surgical complications are inevitable, the quality of surgical care can be improved if the focus is on evidence-based practice recommendations and decisions are made [6].



Schematic presentation of the research methodology

**Table 1:** Frequency and Percentage distribution of Socio-Demographic variables N=64

Variables	Opts	Frequency (f)	Percentage (%)
Age	18-20 Years	34	53.1%
	21-23 Years	25	39.1%
	24-26 Years	4	6.3%
	Above 26 Years	1	1.6%
Gender	Male	0	0.0%
	Female	64	100.0%
Marital status	Married	5	7.8%
	Unmarried	59	92.2%
Previous Knowledge	Yes	49	76.6%
	No	15	23.4%

Table 4.1 shows that out of 64 B.Sc. nursing 2<sup>nd</sup> year students, as per the age majority 34 (53.1%) were belong to age group between 18 to 20 years, followed by 25 (39.1%) belong to age group between 21 to 23 years, followed by 4 (6.3%) belong to age group between 24 to 26 years and the least 1 (1.6%) were above 26 years. As per gender of B.Sc. nursing 2<sup>nd</sup> year students, majority 64 (100%) were females but none of them were male. As per marital status of B.Sc. nursing 2<sup>nd</sup> year students, majority 59 (92.2%) were unmarried and 5 (7.8%) were married. As per previous knowledge regarding surgical wound dressing among B.Sc. nursing 2<sup>nd</sup> year students, majority 49 (76.6%) had previous knowledge and 15 (23.4%) had no previous knowledge regarding surgical wound dressing.

**Table 2:** Frequency and Percentage distribution of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow N=64

Criteria measure for level of knowledge		
Level of knowledge	Frequency	Percentage
Good knowledge. (15-20)	49	76.6%
Average knowledge. (8-14)	15	23.4%
Poor knowledge. (0-7)	0	0.0%
Maximum=20 Minimum=0		

Table 2 shows the Frequency and Percentage distribution of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where majority 49 (76.6%) had good knowledge, 15 (23.4%) had average knowledge but none of them had poor knowledge.

**Table 4:** Descriptive Statistics of Area wise analysis of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow N=64

Descriptive Statistics	Knowledge related to article used in surgical wound dressing	Knowledge related to assessment of wound	Knowledge related to surgical wound dressing	Knowledge related to replacement of article according to infection control guidelines	Overall, knowledge
Mean	3.67	3.66	4.20	4.27	15.80
S.D.	0.874	0.821	0.858	0.740	1.729
Median	4	4	4	4	16
Maximum	5	5	5	5	20
Minimum	2	2	2	2	12
Range	3	3	3	3	8
Mean Percentage%	73.44	73.13	84.06	85.31	78.98

Table 4. shows the Descriptive Statistics of Area wise analysis of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where based on the knowledge related to article used in surgical wound dressing mean score was 3.67, standard deviation was 0.874, median score was 4, maximum was 5, minimum 2, range was 3 and mean percentage was 73.44. Whereas based on knowledge related to assessment of wound mean score was 3.66, standard deviation was 0.821, median score was 4, maximum was 5, minimum 2, range was 3 and mean percentage was 73.13. Whereas based on knowledge related to surgical wound dressing mean score was 4.20, standard deviation was 0.858, median score was 4, maximum was 5, minimum 2, range was 3 and mean percentage was 84.06. Whereas based on knowledge related to replacement of article according to infection control guidelines mean score was 4.27, standard deviation was 0.740, median score was 4, maximum was 5, minimum 2, range was 3 and mean percentage was 85.31. Whereas based on overall knowledge mean score was 15.80, standard deviation was 1.729, median score was 16, maximum was 20, minimum 12, range was 8 and mean percentage was 78.98.

Table 5. shows the Frequency and Percentage distribution of level of Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where majority 61 (95.3%) had good Skill, 3 (4.7%) had average Skill but none of them had poor Skill.

**Table 3:** Descriptive Statistics of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow N=64

Descriptive Statistics	Mean Score	S.D	Median Score	Maximum	Minimum	Range	Mean %
Knowledge Score	15.80	16	1.73	20	12	8	78.98

Maximum=20 Minimum=0

Table 3 shows the descriptive statistics of level of Knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where mean score was 15.80, standard deviation was 16, median score was 1.73, maximum score was 20, minimum score was 12, range of score was 8 and mean percentage was 78.98.

**Table 5:** Frequency and Percentage distribution of level of Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow N=64

Criteria measure of level of skills		
Level of skills	Frequency	Percentage
Good Skills (15-20)	61	95.3%
Average skills (8-14)	3	4.7%
Poor skills (0-7)	0	0.0%

Maximum=122 Minimum=0

**Table 6:** Descriptive Statistics of level of Skills score regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow N=64

Descriptive Statistics	Mean Score	S.D	Median Score	Maximum	Minimum	Range	Mean %
Skill Score	102.94	104	6.17	111	80	31	84.38

Maximum=122 Minimum=0

Table 6. shows the descriptive statistics of level of Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where mean score was 102.94, standard deviation was 104, median score was 6.17, maximum score was 111, minimum score was 80, range of score was 31 and mean percentage was 84.38.

**Table 7:** Descriptive Statistics of Area wise analysis of level of Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow

Descriptive Statistics	Skills related to preparation of necessary equipment needed for surgical wound dressing	Skills related to preparatory phase of patient and environment	Skills related to hand washing steps	Skills related to wearing of PPE (Mask, gown, gloves)	Skills related to removing soiled or old dressing	Skills related to intraprocedural steps of surgical wound dressing	Skills related to post procedural steps of surgical wound dressing	Skills related to documentation phase	Overall Skills
Mean	19.47	10.13	10.34	20.55	8.00	15.47	10.33	8.66	102.94
S.D.	1.773	1.303	0.570	1.532	1.054	1.690	1.554	1.472	6.174
Median	19	10	10	21	8	16	11	9	104
Maximum	22	13	11	23	9	17	12	11	111
Minimum	15	7	9	13	3	5	3	4	80
Range	7	6	2	10	6	12	9	7	31
Mean %	77.88	77.88	94.03	89.33	88.89	90.99	79.45	78.69	84.38

Table 7. shows the Descriptive Statistics of Area wise analysis of level of Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow, where based on the Skill related to preparation of necessary equipment needed for surgical wound dressing mean score was 19.47, standard deviation was 1.773, median score was 19, maximum was 22, minimum 15, range was 7 and mean percentage was 77.88. Whereas based on Skill related to preparatory phase of patient and environment mean score was 10.13, standard deviation was 1.303, median score was 10, maximum was 13, minimum 7, range was 6 and mean percentage was 77.88. Whereas based on Skill related to hand washing steps mean score was 10.34, standard deviation was 0.570, median score was 10, maximum was 11, minimum 9, range was 2 and mean percentage was 94.03. Whereas based on Skill related to wearing of PPE (mask, gown, gloves) mean score was 20.55, standard deviation was 1.532, median score was 21, maximum was 23, minimum 13, range was 10 and mean percentage was 89.33. Whereas based on Skill related to removing soiled or old dressing mean score was 8.00, standard deviation was 1.054, median score was 8, maximum was 9, minimum 3, range was 6 and mean percentage was 88.89. Whereas based on Skill related to intraprocedural steps of surgical wound dressing mean score was 15.47, standard deviation was 1.690, median score was 16, maximum was 17, minimum 5, range was 12 and mean percentage was 90.99. Whereas based on Skill related to post procedural steps of surgical wound dressing mean score

was 10.33, standard deviation was 1.554, median score was 11, maximum was 12, minimum 3, range was 9 and mean percentage was 79.45. Whereas based on Skill related to documentation phase mean score was 8.66, standard deviation was 1.472, median score was 9, maximum was 11, minimum 4, range was 7 and mean percentage was 78.69. Whereas based on Overall Skill mean score was 102.94, standard deviation was 6.174, median score was 104, maximum was 111, minimum 80, range was 31 and mean percentage was 84.38.

**Table 8:** Correlate between the level of Knowledge and Skill score regarding surgical wound dressing among B.Sc. nursing 2nd year students

Pearson's Correlation	Pair	
	Knowledge Score	Skill Score
Post-test		
Mean	15.80	102.94
SD	1.729	6.174
N	64	
Correlation	-0.093	
Result	Significant	

Table 8. shows the Pearson's Correlation between level of Knowledge and Skills regarding surgical wound dressing among B.Sc. nursing 2nd year students. It revealed that mean & standard deviation value for Knowledge score was 15.80±1.729 and Skill score was 102.94±6.174. The value of r was -0.093, which showed a negative correlation which was statistically non-significant.

**Table 9:** Association of level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students with selected demographic variables N=64

Demographic data		Levels of knowledge (n=64)			Association with level of knowledge				
Variables	Opts	Good knowledge	Average knowledge	Poor knowledge	Chi Test	P Value	df	Table Value	Result
Age	18-20 Years	27	7		3.430	0.330	3	7.815	Not Significant
	21-23 Years	19	6						
	24-26 Years	3	1						
	Above 26 Years	0	1						
Gender	Male	0	0		NA				
	Female	49	15						
Marital Status	Married	3	2		0.829	0.363	1	3.841	Not Significant
	Unmarried	46	13						
Previous Knowledge	Yes	37	12		0.129	0.719	1	3.841	Not Significant
	No	12	3						

NS-Non-significant

\*- Significant at  $p < 0.05$

Table 9. shows association between age and level of knowledge regarding surgical wound dressing among B.Sc.

nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated

value of chi square is (3.430) which is less than the tabulated value (7.815) at 0.05% level of significance, with (3df). Hence, we can conclude that age and level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance.

As per gender and level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a no association. Since all the B.Sc. nursing 2nd year students were females. Hence, we can conclude that the level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were in no association with each other.

As per marital status and level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated value of chi square is

(0.829) which is less than the tabulated value (3.841) at 0.05% level of significance, with (1df). Hence, we can conclude that marital status and the level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance.

As per previous knowledge regarding surgical wound dressing and the level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated value of chi square is (0.129) which is less than the tabulated value (3.841) at 0.05% level of significance, with (1df). Hence, we can conclude that previous knowledge regarding surgical wound dressing and level of knowledge regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance.

**Table 10:** Association of level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students with selected demographic variables N=64

Demographic data		Levels of skills (n=64)			Association with level of skills				
Variables	Opts	Good skill	Average skill	Poor skill	Chi test	P value	Df	Table value	Result
Age	18-20 Years	33	1		1.092	0.779	3	7.815	Not Significant
	21-23 Years	23	2						
	24-26 Years	4	0						
	Above 26 Years	1	0						
Gender	Male	0	0		NA				
	Female	61	3						
Marital Status	Married	5	0		0.267	0.606	1	3.841	Not Significant
	Unmarried	56	3						
Previous Skill	Yes	47	2		0.172	0.679	1	3.841	Not Significant
	No	14	1						

NS-Non-significant \*- Significant at  $p < 0.05$

Table 10. shows association between age and level of skill regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated value of chi square is (1.092) which is less than the tabulated value (7.815) at 0.05% level of significance, with (3df). Hence, we can conclude that age and level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance.

As per gender and level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a no association. Since all the B.Sc. nursing 2nd year students were females. Hence, we can conclude that gender and level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were in no association with each other.

As per marital status and level of skill score regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated value of chi square is (0.267) which is less than the tabulated value (3.841) at 0.05% level of significance, with (1df). Hence, we can conclude that marital status and level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance. As per previous knowledge regarding surgical wound dressing and level of skills regarding surgical wound

dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow had a non-significant association. The calculated value of chi square is (0.172) which is less than the tabulated value (3.841) at 0.05% level of significance, with (1df). Hence, we can conclude that previous knowledge regarding surgical wound dressing and level of skills regarding surgical wound dressing among B.Sc. nursing 2nd year students of Era college of nursing, Lucknow were non-significantly associated with each other at 0.05% level of significance.

## Discussion

The present study was conducted to assess the competency regarding surgical wound dressing through OSCE method among B.Sc. nursing 2<sup>nd</sup> year students of Era college of nursing Lucknow. Non- experimental descriptive research design was used for this study. 64 B.Sc. nursing 2<sup>nd</sup> year students, who met the inclusion criteria were selected from Era college of nursing, Lucknow. Prior to the data collection procedure, Formal permission was obtained from the principal (Era college of nursing, Lucknow.) Socio-Demographic profile was used to collect personal information of subjects and self-structured questionnaire and observational checklist method was used to assess the competency of surgical wound dressing. According to purposive sampling technique 64 samples had been taken and by using the OSCE method the competency regarding surgical wound dressing was assessed. There were 12 stations and it was divided into knowledge station and skills station (4 knowledge stations, 8 skills stations). The stations

were developed to contain their respective evaluation criteria. And in each station evaluator was present. The data was collected by evaluator in each station. Each student completed a 12th station circuits. 12 students entered at the same time, and each of them went to a different station. They took until they completed a circuit. Each station lasted 6 minutes: one minute to read the purpose of the station, and five minutes to perform the task proposed. The students had to remain in the station for a total of 5 minutes, even if they completed the task in a shorter time. A sound alert went off to mark these time intervals and for continuity of the circuits. Same steps were followed for total samples. The privacy was maintained by screen in each station. Data was analysed using descriptive and inferential statistics. Based on the collected data B.Sc. nursing 2<sup>nd</sup> year students have competency (good knowledge (76.6%) and good skill (95.3%)) regarding surgical wound dressing. And there was negative correlation between knowledge score and skill score regarding surgical wound dressing ( $r = -0.093$ ) which was statistically non-significant. The association between selected demographic variables and knowledge and skill score statistically there was no significant association between the demographic variables of age, gender, marital status or previous knowledge  $p < 0.05$ .

### Conclusion

Wound dressing is a nursing duty that requires excellent skills and knowledge to prevent enormous complications. To prevent wound complications, it is necessary to study existing knowledge and practices as well as assessing the difference between these and, ideally, to lean more towards evidence-based practices for wound care. Based on the collected data B.Sc. nursing 2<sup>nd</sup> year students have competency (good knowledge (76.6%) and good skill (95.3%)) regarding surgical wound dressing. And there was negative correlation between knowledge score and skill score regarding surgical wound dressing ( $r = -0.093$ ) which was statistically non-significant. The association between selected demographic variables and knowledge and skill score statistically there was no significant association between the demographic variables of age, gender, marital status or previous knowledge  $p < 0.05$ .

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