



Original Article

Knowledge of Surgical Site Infection among Post-operative Patients in Kathmandu University Teaching Hospital Dhulikhel, Nepal

Abstract:

Introduction: Surgical site infection (SSI) is a significant problem for hospitalized surgical patients. SSIs are the third most frequently reported nosocomial infection accounting for 14% to 16% of all nosocomial infections among hospitalized patients.

Objectives: The objective of this study was to find out the knowledge of surgical site infection among post-operative patient.

Methods and Materials: A structured interview schedule consisting of questions related demographic characteristics and knowledge items related to SSI developed by reviewing literature. A descriptive cross sectional study was conducted among 100 patients admitted in different wards of Dhulikhel Hospital. Who were selected by simple random sampling.

Results: In the study, sixty four percent of patients were aged less than 40 years, 66% of the patient's hospitalization day was less than or equals to seven, 24% were illiterate, 22% had history of operation and among them 4% had experience of surgical site infection. Eighty-one percent of patient didn't have any information about SSI. The mean knowledge score was 20.55 ± 6.09 SD on total score of 32. The study showed association of mean knowledge scores between different age groups and different level of education.

Conclusion: This study reveals that only 19% of the patients had information on SSI and that the healthcare workers were less involved in providing the information. Hence to enhance patients' involvement in SSI prevention and recognition, the provision of written patient-directed information recommended.

Key Words: Knowledge, Surgical site infection, Patients, Post-operative, Nosocomial infection

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Introduction

Surgical site infections are the second most common type of adverse events occurring in hospitalized patients. A surgical wound infection occurs when micro-organisms from the skin or environment enter the incision that the surgeon makes through the skin in order to carry out the operation.¹ These infections can develop at any time from two to three days after surgery until the wound has healed (usually two to three weeks after the operation).² An estimated 40 to 60 percent of these infections are actually preventable. Thirty eight percent of all nosocomial infections in surgical patients are surgical site infections and 4 to 16% of all nosocomial infections are surgical site infections. Four to six percent of operated patients will develop SSI and increases the patient's length of stay in the hospital by an average of 7.5 days. Patient's knowledge regarding prevention can dramatically

decrease the rate of incidence of surgical site infection.¹ A prerequisite for patient participation is information and patient learning. Better knowledge of patients regarding prevention is associated with better outcomes. Hence it is necessary that the patients undergoing surgery have an adequate knowledge regarding surgical site infection. This study aims to find out there is adequate knowledge regarding surgical site infection.

Materials and methods

This descriptive cross sectional study was done among 100 post operative patients admitted in different wards in Dhulikhel teaching Hospital in 2013. Study population consisted of post-operative patients from different wards like surgical, orthopedic and gyane. A structured interview schedule consisting of questions related demographic characteristics and

knowledge items related to SSI developed by reviewing literature. Regarding the knowledge of SSI, 32 questions were included in the study. Correct response was scored as 1 and incorrect as 0. Total score of knowledge was 32. The content validity of the instrument was established seeking opinion of subject expert. The instrument was translated into Nepali language and pre-tested on 10 similar patients from different wards. Necessary modification was done accordingly. The study used probability stratified random sampling technique. The strata were chosen on the basis of different wards (surgery, Gynecology and orthopedic). Then from each stratum, the required sample size was chosen by the simple random technique (Lottery method). The selected post operative patient of respective bed was included in the study. Data was gathered by interview technique. The collected data were reviewed daily for completeness and accuracy. Data were entered into SPSS version 16.0 for statistical. Data analysis was performed using both descriptive and inferential statistics.

Result

Table 1: Socio - demographic characteristics of the patients n = 100

Sample characteristics	Percentage
Age in years :	
Less than or equal to 40	64
More than 40	35
Mean age: 35.53	
Ward of respondents:	
Surgery	37
Orthopedic	35
Gynecology	28
Duration of hospitalization:	
≤7 days	92
> 7 days	8
Education:	
Illiterate	24
Literate	76
Previous history of operation:	
Yes	22
No	78
n = 22	
Previous history of SSI	
Yes	4
No	18

Table 1 depicts that more than half of patients (64%) were aged less than 40 yrs, the mean age being 35.33 yrs. Seventy six percent of patient were illiterate. Majorities (92%) of the patient's hospitalization were less or equals to 7 days. Seventy eight

percent of patient had no history of operation and total 100 patients were included in this study among them 22 patient i.e. 4% of patient had history of previous SSI.

Table 2: Knowledge of patient's regarding SSI n =100

Correct response	Percentage
Risk factors:	
Weak immune system	74
Malnutrition	60
Large no. of visitors	58
Smoking	41
Diabetes	40
Obesity	37
Increasing age	27
Prolong hospitalization	14
Symptoms of SSI:	
Pain or severe tenderness in the area of incision site	64
Swelling in the incision area	65
Redness around incision area	47
Foul odor coming from the incision area	85
Drainage from the incision site	95
Fever & malaise	31

Table 2 reveals that most (74%) of the patient were aware of weak immune system as a risk factor for SSI, 60% of the patient considered malnutrition as a risk and 48% agreed that large number of visitors increase the risk for SSI. Majority (95%) of answered that the drainage from the incision area is a symptom of SSI, 85% responded with foul odor coming from incision area and 65% of patient answered that swelling in the incision.

Table 3: Knowledge of patient's regarding prevention of SSI n=100

Correct response	Percentage
Prevention of SSI :	
SSI is preventable	69
Persons responsible for prevention are:	
Doctors	90
Nurses	87
Patients	79
Visitors	73
Cleaners	71
Pre-operative bathing	38
Hand washing before & after handling the wound	81
Environmental cleanliness	87
Early mobilization & exercise	59
Protein & vitamin rich diet	31
Wearing clean clothes	88

Table 3 illustrates that majority (90%) of the patient answered that doctors are responsible for prevention of SSI, 88% of patients believed that wearing cleans clothes were prevent SSI. Most (87%) of patients answered that environmental cleanliness helps to prevent SSI. Eighty one percent of patient believed that health personnel should wash hands before and after wound care.

Table 4: Association of knowledge with selected variables n=100

Sample characteristics	f	Mean	SD	t value	p value
Age in years :					
Less than or equal to 40	64	21.45	5.84	2.00	0.048
More than 40	35	18.94	6.29		
Duration of hospitalization:					
Less than to equals to 7	92	20.26	6.13	1.62	0.101
More than	8	23.88	4.73		
Education:					
Illiterate	24	16.33	6.36	1.20	0.00
Literate	76	21.88	5.39		
Previous history of operation:					
Yes	22	21.09	5.76	0.42	0.67
No	78	20.39	6.21		
Previous history of SSI:					
Yes	19	19.75	2.99	0.06	0.618
No	81	21.39	6.23		

Significant at p-value <0.05

Table 4 describes comparison of mean knowledge score of patient with selected variables, calculated by using T-test. The findings revealed that patients aged less than or equals to 40 was 21.45 while the mean score of patient aged more than 40 yrs was 18.94. The mean score was slightly higher in patients who aged less than equals to 40 yrs than in patient aged more than 40 yrs. The differences in the mean was statistically significant since the p value was <0.05. There was mean score in illiterate patients was 16.33 while the mean score in literate patient was 21.88. The mean score was higher in literates than in illiterates and the difference was statistically significant since the p value was <0.05. Same as the mean score of patient who had undergone previous surgery was 21.09 while the mean score of patient who had not undergone previous surgery was 20.39. The mean score was slightly higher in patients who had undergone previous surgery than in who had not undergone previous surgery but the difference was not statistically significant since p value was <0.05.

Discussion

The present study showed that the mean knowledge score of

patients was 20.55 ± 6.09 on total score of 32 items. Regarding the risk factors 41% of the patient agreed that smoking increases the risk which is lower in comparison to the study done in USA that stated 76% of patients knew that smoking increases the risk of SSI.³ This is probably because the respondents in that study were all literates. A descriptive study in France revealed that 80% of patients stated that during their hospitalization they had received no information regarding SSI.⁴ Similar to this study also revealed that 81% of patients had gained no information regarding SSI. The study conducted in USA, 92% of patients were aware of SSI manifestations and adverse consequences.³

Similarly to that, this study also reveals that patients have better knowledge regarding SSI manifestation. A study carried out in University of Virginia Medical center, USA stated that 83% of the patients believed that a SSI could be prevented.⁵ Whereas the study revealed that 69% of the patients believed that a SSI could be prevented. In the present study, there was significant difference in the mean knowledge score between literates and illiterates and in the patient aged less than or equals to 40 years and patients aged more than 40 yrs. Similarly a study conducted in San Antonio revealed that age and education were associated with perceived knowledge of infection prevention measures.¹⁹

Conclusion

The study reveals that knowledge score of patients was 20.55 ± 6.09 SD on a total score of 32 items. The study showed association of mean knowledge score between different age groups and different level of education. However it didn't show the association of mean knowledge scores between patients with and without previous history of operation, patient who had previous history of SSI. Hence to enhance patients' involvement in SSI prevention and recognition, the provision of written patient-directed information recommended.

Recommendations

1. This study highlights the need to strengthen the health care workers' role in providing patient education about Surgical Site Infection. Hence, all the health care workers especially nurses and student nurses who spend most of their time with patient's are recommended to provide various formal and informal health education regarding Surgical Site Infection.

2. This type of study can be carried out in different hospitals so that the results can be generalized.

3. This study findings suggest that patient's require further information on Surgical Site Infection during hospitalization to enhance their involvement in prevention and recognition on Surgical Site Infection. So, the provision of written documents, patient directed information could be initiated from managerial level in Dhulikhel Hospital.

Limitation of the study

The result of the study does not represent the whole population because it is a small scale only one hospital based study limited to the post operative patient admitted in Dhulikhel Hospital of Nepal during the short period of data collection. Interview schedule was used to find out knowledge of post operative patient about SSI under or over reporting can be occurred.

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Ethical consideration

Verbal and written permission was obtained from institutional review committee of Kathmandu University Teaching Hospital, Dhulikhel before data collection. Verbal consent was taken from each patient before interviewing them and was given due to respect for acceptance or rejection of the interview and obtained information used only for the necessary research purpose.

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