

Greek nurses' knowledge on the prevention of surgical site infection: an investigation

Objective: The aim of the study was to investigate nurses' knowledge regarding the prevention of surgical site infection (SSI), and to examine the relationship between nurses' demographic characteristics and educational level and their level of knowledge in prevention of SSIs. A further aim was to examine the differences in nurses' knowledge with respect to selected variables and to identify the most significant predictors of nurses' knowledge regarding the prevention of SSIs, to support the provision of high-quality nursing care.

Method: A prospective, observational study of a convenience sample of nurses and assistant nurses working in surgical departments, in a public general hospital for adults in Attica, during May to August 2016. For data collection, an anonymous self-completion questionnaire was developed and tested for comprehension and acceptability.

Results: Data was collected from 148 nurses and assistant nurses,

121 (81.8%) were female, 73.6% were aged 36–50 years and 43.9% had 11–20 years of experience. With regards to educational level, 66.2% had a degree from a technological educational institute and 10.1% had a Master's degree. Furthermore, 18.2% had a surgical specialty and 59.5% had received special training on surgical infections. The majority of respondents did not chose the correct definition of the time of occurrence of SSIs. Several statistically significant correlations were observed between knowledge on safer hair removal and respondent age ($p=0.037$), educational level ($p=0.003$), professional experience ($p=0.048$), and training in SSIs ($p=0.009$).

Conclusion: The results of this study revealed that the majority respondents had a high level of knowledge regarding the prevention of SSIs, which contrasted with a low level of knowledge regarding their full definition of the time of occurrence.

Declaration of interest: The authors have no conflicts of interest.

education level • nurses' knowledge • prevention • surgical site infection

The definition of surgical site infection (SSI) is based on criteria determined by the Centers for Disease Control and Prevention (CDC), the European Centre for Disease Prevention and Control (ECDC), and the World Health Organization (WHO).^{1–4} SSIs are divided into three main categories:

- Superficial incisional SSI: occurs within 30 days postoperatively and includes only the skin or subcutaneous tissue of the incision
- Deep incisional SSI: occurs within 30 days postoperatively if no implant is left in place, or one year if implant is in place and includes the deep soft tissues of the incision
- SSI organ/space: occurs within 30 days postoperatively or within one year if implant is in place and includes any part of the anatomy, other than the incision which was opened or manipulated during the operation.^{1–4}

CDC estimates that 500,000 SSIs occur every year in the US. These infections represent 3% of mortality associated with surgical procedures, prolonged length of hospital stay and increased medical costs.⁵ Shepard et al.⁶ estimate the cost to health services of SSIs, may amount to US\$2,268,589 per 100 procedures. Hospitals have a financial incentive to reduce SSIs due to the costs associated with the daily treatment of patients with SSIs, the length of hospital stay.^{5,6}

According to ECDC, in its prevalence survey carried out in 2011–2012 in Europe, SSIs constituted the second most frequent healthcare-associated infection after respiratory tract infections.⁷

In Greece, of the 8,247 patients in 37 acute care hospitals, 820 patients had a hospital-acquired infection. SSIs accounted for 10.9% of these infections: 3.5% were characterised as superficial incisional, 2.7% as deep incisional, 4.5% organ/space and 0.1% was not specified.⁷

It is important to mention that, of the estimated 5% of patients worldwide undergoing surgery who will develop an SSI, 60% of these infections are preventable.^{5,11,17}

Aim

This study aimed to investigate nurses' knowledge regarding the prevention of SSIs, and to examine the relationship between nurses' demographic characteristics and educational level and their level of

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Table 1. Demographic characteristics of the study participants

Variables	% (n/148 participants)
Female:male	81.8 (121):18.2 (27)
Age 20–35 years	17.6 (26)
Age 36–50 years	73.6 (109)
Age 51–65 years	8.8 (13)
Educational level	
University	8.1 (12)
Technological education institute	66.2 (98)
Secondary education	25.7 (38)
Specialty	
Surgical specialty	18.2 (27)
Masters degree (MSc)	10.1 (15)
Doctorate degree (PhD)	0.7 (1)
Master and doctorate	0.7 (1)
None	70.3 (104)

knowledge in preventing SSIs. A further objective was to examine the differences in nurses' knowledge with respect to selected variables, and to identify the most significant predictors of nurses' knowledge regarding the prevention of SSIs, to support the provision of high-quality nursing care.

Method

Data collection and analysis for this prospective, observational study was carried out between May and August 2016. A convenience sample of nurses and assistant nurses working in surgical departments, in a public general hospital for adults in Attica, participated in the study.

For data collection, an anonymous, self-completion questionnaire was developed and tested for comprehension and acceptability, based on guidelines by the CDC, the ECDC, the National Institute for Health and Care Excellence (NICE), the WHO, the Hellenic Center for Disease Control and Prevention (HCDCP), and the Health Service Executive (HSE), on the prevention of SSIs and wound management.^{1–4,13–18,20,21} The guidelines had been validated by translation from English to Greek by two health professionals with a good knowledge of English, and then from Greek back to English by a health professional who was a native English speaker.

The first part of the questionnaire included demographic characteristics of the participants such as gender, age, educational level, total professional experience in the surgical department, and any extra specific training on SSIs.

The second part of the questionnaire included questions on the classification of SSIs based on the time

of occurrence, the classification of the infection in relation to the body part which was opened or manipulated during the operation, and surgical wound classification. Furthermore, this part included questions on measures to prevent SSIs in all three phases—preoperative, intraoperative and postoperative—as well as questions about choosing the most appropriate dressing.

Statistical analysis

The categorical variables are described in the form of absolute and relative (%) frequencies. For the study of correlations between qualitative variables, the Pearson's chi-squared statistical criterion was used. Where the conditions for applying Pearson's chi-squared were not applicable, Fisher's exact test and the Monte Carlo test were used. All tests were two-tailed, and a statistical significance level $p < 0.05$ was set. For data analysis, Statistical Package for Social Sciences (SPSS, version 20) was used.

Ethical considerations

Data collection was carried out after written permission from the Scientific Council of the hospital where the study was conducted. Written, informed consent was received from all participants, concerning the aim, the confidentiality of data and the voluntary nature of participation in this study.

Results

Participants

A sample of 148 nurses and assistant nurses from surgical departments took part in the study. The majority ($n=121$, 81.8%) were female and 109 (73.6%) were aged between 36–50 years. With regards to educational level, 98 nurses (66.2%) had a degree from a technological educational institute (TEI), 38 (25.7%) had completed secondary education (SE) and 12 (8.1%) had a university degree. In terms of specialty, 18.2% had a surgical specialty, 10.1% had a Masters degree and 0.7% had a doctorate degree (Table 1).

In terms of work experience in a surgical department, the largest groups of nurses with this experience were those in the 0–5 years and the 11–15 years categories (20.9% for each group) (Table 2). The smallest group (11.5%) was in the 21–25 years' category. Over half (59.5%) of the participants had not received any education relating to SSIs, whereas 39.2% had received related education, the mean number of educational programmes participated in was 2.02 ± 1.37 (mean \pm standard deviation). Of the respondents, 68.9% mention that training programmes/seminars regarding SSI control are being organised at the hospitals they work at (Table 2).

Classifying SSIs

This study revealed that when asked about the full definition of SSI time of occurrence, only a low percentage of participants gave the correct answer;



39.2% chose '30 days after the operation', 29.7% chose '30 days after the operation if no implant is left in place', and 28.4% chose 'one year if implant is in place'.

However, in response to questions about SSI classification in relation to the body part either opened or manipulated during the operation, as well as the surgical wound classification, the percentage of correct answers was higher at 40.5% and 58.1%, respectively.

In response to questions about remote infection of the surgical site, 45.9% replied that elective operations should be postponed until the remote infection had resolved. The same percentage (45.9%) replied that the delay depended of the type of infection. Half of respondents (50%) knew that hair removal from the surgical site should be done immediately, before the operation and with electric clippers (59.5%) (Table 3).

Almost all respondents (98%) knew the purpose of a preoperative bath, and 89.9% knew that an antiseptic agent should be used for this bath. Regarding the role of antimicrobial prophylaxis in preventing an SSI, 95.9% chose the correct answer, and 73% gave the correct answer regarding the appropriate time to give a first dose. Almost all respondents (97.3%) knew the rules regarding personnel traffic in the operating room, and 62.2% knew the proper way to use a surgical mask. Moreover, 98.6% responded correctly to the question about the purpose of hand antisepsis for surgical team.

Less than half of respondents (43.9%) replied correctly to the question about the length of time that the incision after the operation should be protected, and 50.7% would advise the patient to take a bath safely 48 hours postoperatively.

In response to questions regarding wound dressings, 60.1% chose the interactive dressing, for wounds that heal by secondary intention, as an appropriate wound dressing, and 87.2% chose the sterile technique as the

Table 2. Participants' professional experience, education relating to surgical site infections, and educational programmes

Variables	% (n/148 participants)
Professional experience in surgical department	
0–5 years	20.9 (31)
6–10 years	16.9 (25)
11–15 years	20.9 (31)
16–20 years	15.5 (23)
21–25 years	11.5 (17)
26–30 years	14.2 (21)
Education relating to surgical infections	
Yes	39.2 (58)
No	59.5 (88)
No response	1.4 (2)
Educational programmes	
Yes	68.9 (102)
No	25 (37)
No response	6.1 (9)
Mean number of educational programmes (±standard deviation)	2.02 (±1.37)

appropriate technique for changing surgical site dressings. Nearly all respondents (91.2%) knew that hand hygiene should be carried out before and after dressing changes, and any contact with the surgical site. Again, almost all (93.9%) knew the proper way to chose a wound dressing.

Table 3. Statistically significant correlation regarding the age of participants and responses to questions

Questions	Age, years			p-value
	20–35	36–50	51–65	
1. Safer way of removing hair				
With electric clipper	57.7%	59.6%	61.5%	0.037
With razor	15.4%	33.9%	30.8%	
With depilatory cream	26.9%	6.4%	7.7%	
2. Appropriate time for the first dose of antimicrobial prophylaxis				
Time such that a bactericidal concentration is established in serum and tissues when the incision is made	53.8%	78.9%	61.5%	0.009
When the incision is made, so that bactericidal concentration is high at the time the skin is opened	15.4%	6.4%	30.8%	
Administer antimicrobial prophylaxis at least eight hours before incision is made	30.8%	14.7%	7.7%	
3. Postoperative patient bath				
Advise patient to take shower safely, at least 48 hours after elective operation	4%	8.3%	30.8%	0.016
Advise patient to take shower safely, more than 48 hours after elective operation	72%	49.1%	30.8%	
Advise patient to take shower safely, more than 10 days after elective operation	24%	42.6%	38.5%	

Table 4. Statistically significant correlation regarding educational level of participants and responses to questions

Questions	Educational level			p-value
	University	TEI	SE	
1. Time of SSI occurrence: within six months after operation, if implants are left in place				
Correct	91.7%	50%	44.7%	0.014
Incorrect	8.3%	50%	55.3%	
2. Time of SSI occurrence: within one year after operation, if implants are left in place				
Correct	8.3%	24.5%	44.7%	0.017
Incorrect	91.7%	75.5%	55.3%	
3. Classification of surgical wounds				
Clean, contaminated, dirty-infected	0%	21.4%	28.9%	0.006
Clean, clean-contaminated, contaminated, dirty-infected	91.7%	62.2%	36.8%	
Clean and contaminated	8.3%	16.3%	34.2%	
4. Safer way of removing hair				
With electric clipper	75%	64.3%	42.1%	0.003
With razor	0%	26.5%	50%	
Depilatory cream	25%	9.2%	7.9%	
5. Dressing usage when surgical wounds healing by secondary intention				
Use sterile gauze to manage surgical wounds that are healing by secondary intention	8.3%	29.6%	50%	0.016
Use spray which contains neomycin and a dressing to manage surgical wounds that are healing by secondary intention	16.7%	5.1%	7.9%	
Use an appropriate interactive dressing to manage surgical wounds that are healing by secondary intention	75%	65.3%	42.1%	
6. Appropriate technique for changing dressings from surgical wounds				
Clean technique	8.3%	3.1%	18.4%	0.002
Aseptic technique	66.7%	92.9%	78.9%	
If 48 hours has elapsed, the technique is of no importance	25%	4.1%	2.6%	

Correlations

No statistically significant correlation was found with regards to the gender of participants.

There was a correlation between participants' age and questions regarding prevention which were found to be statistically significant. With regards to the question on the safest way to remove hair from the surgical site, where the participants in the 51–65 years' category had the highest percentage (61.5%) of correct answers (p=0.037). Participants in the 36–50 years' category gave the highest level of correct answers (78.9%) on appropriate timing of the first antimicrobial prophylaxis doses (p=0.009), and in the 20–35 years' category, 72% gave the correct answer on the appropriate time for a postoperative bath (p=0.016) (Table 3).

Furthermore, there was a correlation between educational level and questions regarding the definition of time of SSI occurrence 'within six months postoperatively, if implants are left in place' (p=0.014). Almost all participants (91.7%) in the 'university'

category chose the incorrect answer. Respondents in the 'TEI' category were evenly split between the correct and incorrect answer (50% for both). Also, with regards to the full definition of the time of SSI occurrence '1 year postoperatively, if implants are left in place' (p=0.017) respondents in the 'university' category had the lowest rate of correct answers (8.3%) (Table 4).

A correlation between educational level and surgical wound classification (p=0.006) was also identified. Those in the 'university' category chose the correct answer (91.7%) on the safest way of removing hair from surgical site (p=0.003). Half of the secondary education category responders, (50%) incorrectly chose the razor as the safest way. With regards to the most appropriate wound dressing for a wound healing by secondary intention the 'university' category had the highest rate of correct answers (75%) (p=0.016). Those respondents in the 'TEI' category had the highest rate (92.9%) of correct answers given for what would be the most appropriate technique for changing



Table 5. Statistically significant correlation regarding professional experience of participants

Questions	Professional experience				p-value
	0–10 years	11–20 years	21–30 years	31–40 years	
1. Time of occurrence: within 30 days after operation, if no implants are left in place					
Correct	30.4%	19.7%	46.8%	16.7%	0.013
Incorrect	69.6%	80.3%	53.2%	83.3%	
2. Safer way of removing hair					
With electric clipper	43.5%	63.6%	59.6%	66.7%	0.048
With razor	30.4%	33.3%	25.5%	33.3%	
Depilatory cream	26.1%	3%	14.9%	0%	
3. Proper way to use surgical mask					
Surgical mask should be cover the nose of personnel in the surgical team and who are ≤1m away from the incision	0%	3%	2.1%	16.7%	0.001
Surgical mask should be cover the mouth and the nose of personnel entering the operating room when an operation is about to begin, is already underway, or sterile instruments are exposed	91.3%	63.6%	46.8%	58.3%	
Surgical mask should be cover the mouth and the nose of personnel from the moment surgical hand hygiene begins	8.7%	33.3%	51.1%	25%	
4. Postoperative patient's bath					
Advise patient to take shower safely, at least 48 hours after elective operation	0%	7.6%	15.6%	16.7%	0.016
Advise patient to take shower safely, more than 48 hours after elective operation	65.2%	62.1%	33.3%	33.3%	
Advise patient to take shower safely, more than 10 days after elective operation	34.8%	30.3%	51.1%	50%	
5. Dressing usage when surgical wounds healing by secondary intention					
Use sterile gauze to manage surgical wounds that are healing by secondary intention	30.4%	24.2%	40.4%	58.3%	0.021
Use spray which contains neomycin and a dressing to manage surgical wounds that are healing by secondary intention	17.4%	9.1%	0%	0%	
Use an appropriate interactive dressing to manage surgical wounds that are healing by secondary intention	52.2%	66.7%	59.6%	41.7%	

surgical site dressings from surgical site (p=0.002) (Table 4).

Regarding total professional experience, and questions on the classification of SSIs based on the time of occurrence, a high level in all categories chose the incorrect answer (p=0.013). In response to the question on the safest way of removing hair from the surgical site, a higher percentage (66.7%) of participants with the longest professional experience (31–40 years) gave the correct answer (p=0.048). Participants in the shortest range (0–10 years) had the highest correct response rate (91.3%) on the proper use of the surgical mask (p=0.001). This was also the case on the appropriate time for patients to take a postoperative bath (65.2%) (p=0.016). With regards to the most appropriate wound dressing to be used for a wound healing by secondary intention, participants with ≥21 years' experience replied that they would avoid the use of a spray containing neomycin and a dressing to manage surgical wounds (p=0.021) (Table 5).

Other statistically significant relationships were

found between participants' experience in surgical departments and classifying SSIs based on the time of occurrence. Participants with >26 years' experience (85.7%) chose '15 days after the operation' and not the full, correct definition (p=0.011). Participants in the 21–25 years' category (64.7%) also chose to advise patients to take a shower safely, more than 10 days postoperatively (p=0.003) while those in the 6–10 years' category (62.5%) would correctly advise patient to 'take a shower safely, more than 48 hours after elective operation' (Table 6).

The last statistically significant relationships were between participants who had received education regarding SSIs and the time to remove hair from the surgical site (p=0.023). Those who had received education had a higher correct response rate (58.6%) than those who did not receive any education (p=0.009), as was the case with regards to the safest method to use (67.2%) (Table 7).

Discussion

The results of this study revealed that the majority of

Table 6. Statistically significant correlation regarding professional experience in surgical department of participants

Questions	Professional experience in surgical department						p-value
	0-5 years	6-10 years	11-15 years	16-20 years	21-25 years	26-30 years	
1. Time of occurrence: within 15 days after operation							
Correct	54.8%	72%	80.6%	43.5%	76.5%	85.7%	0.011
Incorrect	45.2%	28%	19.4%	56.5%	23.5%	14.3%	
2. Postoperative patient's bath							
Advise patient taking shower with safety, at least 48 hours after elective operation	6.5%	0	22.6%	0	0	25%	0.003
Advise patient taking shower with safety, more than 48 hours after elective operation	58.1%	62.5%	54.8%	60.9%	35.3%	25%	
Advise patient taking shower with safety, more than 10 days after elective operation	35.5%	37.5%	22.6%	39.1%	64.7%	50%	

respondents did not know the full definition of the time of SSI occurrence. In studies carried out in Jordan by Qasem and Hweidi⁹ and in Bangladesh by Sickder,¹² nurses had an equally low level of knowledge in this field.^{9,12}

In a similar study, in which a total of 423 nurses participated, working in two randomly selected referral hospitals in Amhara, Ethiopia, Teshager et al.⁸ in 2015, found that 40.7% of nurses had a good level of knowledge about the prevention of SSIs.

Sickder¹² in 2010, in a study of 120 nurses working in surgical departments from Shere-E-Bangla Medical College Hospital in Bangladesh, revealed that the nurses had a low level of knowledge (M=69.67%, SD=8.53) and high level of practice (M=89.95%, SD=4.06).¹²

Qasem and Hweidi⁹ in 2015, reported the results of a study of 200 Jordanian nurses from four targeted. They showed that nurses had a low level of knowledge concerning guidelines on preventing SSIs. Only 36% knew the classification of the infection, and only 7.5% of participants recognised the occurrence time of superficial incisional SSI.⁹

In the Qasem and Hweidi study, the majority of nurses knew to postpone the elective operation when there is a remote infection until after it has cleared and that the that the incision should be protected with sterile dressings 24–48 hours after the operation.⁹ In this study, views were split between postponing and querying the nature of the infection before deciding.

There was a higher percentage of correct answers in relation to the appropriate time and safe removal of hair from the surgical site. This is in contrast participants in similar studies, such as those by Qasem and Hweidi,⁹ Tsianti et al.¹⁰ and Sickder.¹²

A bath or shower the night before the elective operation constitutes a well-accepted procedure for reducing bacteria from the patient's skin, preoperatively.^{4,18} In the study by Tsianti et al.,¹⁰ 61.35% replied that the preoperative shower or bath should be done the night before the elective operation, with an antiseptic agent. As Webster and Osborne¹⁹ state, it remains unclear whether the use of an antiseptic agent helps to reduce the incidence of SSIs postoperatively. This finding does not replace the official guidelines recommending a bath or shower the night before the elective operation, with an antiseptic agent.^{1-4,17-19} In this study, the majority of nurses and assistant nurses gave a high level of correct answers regarding the preoperative shower in comparison with nurses from Bangladesh¹² and nurses who participated in a similar study in Greece.¹⁰

With regards to the use of antimicrobial prophylaxis, there was a high percentage of correct answers among participants, especially in the '36–50 years' category (78.9%). Whereas in the Tsianti et al.¹⁰ study, a large percentage of nurses replied that 'patient enters in operation room with antimicrobial prophylaxis'.

Similarly, the results of Bratzler et al.²⁰ study, showed that the role of antimicrobial prophylaxis in reducing SSI is important. It was recommended primarily for operations involving high levels of infection (clean-contaminated or contaminated) and in clean operations with increased risk of infection, for example if implants are in place, even if infection is unlikely to happen.^{17,20}

Table 7. Statistically significant correlation regarding the education of participants relating to surgical infections

Questions	Education in surgical infection		p-value
	Yes	No	
1. Appropriate time of hair removal from surgical site			
The day of elective operation	25.9%	19.3%	0.023
The night before the elective operation	15.5%	36.4%	
Immediately before the elective operation	58.6%	44.3%	
2. Safer way of removing hair			
With electric clipper	67.2%	53.4%	0.009
With razor	17.2%	39.8%	
Depilatory cream	15.5%	6.8%	

Regarding the purpose of antiseptics of the surgical teams' hands, the percentage of correct answers in this study was also high. This is similar to the results of the Sickder study in Bangladesh.¹² In another similar study by Labrague et al.¹¹ where 21 perioperative nurses participated from four hospitals in Samar (Philippines), the majority of participants (57.14%) had an 'excellent knowledge' of the principles of sterile technique and 38.1% had 'very good knowledge'. A third of the respondents had attended 1–3 relevant educational programmes. The study revealed the positive impact of knowledge on the practical application of aseptic techniques.¹¹

In the group of questions related to wound dressings, in this study nurses' knowledge appeared to be affected by other health professionals. In choosing their answer, the majority of participants chose the option that the incision should be protected until a surgeon's instruction was given to change wound dressings, instead of according to the guidelines, which recommends that the incision should be protected with sterile wound dressings for 24–48 hours postoperatively.^{1–4}

In the Qasem and Hweidi study,⁸ 53% of respondents knew that the incision, which was to heal by primary intention, should be protected with dressings 24–48 hours after surgery, and 69.5% of respondents stated that the elective operation should be postponed until the remote infection of the surgical site had resolved. Also, 36% of participants knew when to remove hair from the surgical site.⁹

Moreover, statistical analysis revealed a statistically significant correlation in the knowledge of nurses between those who had received some specific surgical training and those who had not—75% of participants had not received any special training regarding to SSIs.⁹

In the study by Tsianti et al.¹⁰ in four general, regional hospitals of Athens, of the 163 nurses and assistant nurses participating, 30.2% had not attended any courses in the prevention of hospital infections.

Contrary to this study, the percentage of participants who had not attended any courses related to surgical infections was 59.5%.

From the correlations made, no statistically significant correlations were found between the gender of participants and the questions, contrary to Teshager et al.⁸ study, where male nurses had a three-times higher chance of correct answers. The possible explanation of this finding, according to the researchers, was that in Ethiopia, the majority of higher degree holders were men.

In the Qasem and Hweidi⁹ study, statistically significant correlation was found between nurses' knowledge and those who had received special surgical training. Note that 75% of participants had not received any special training relative to SSI.

According to Sickder,¹² there was a weak, significantly negative correlation between nurses' knowledge and practice regarding prevention of SSIs. Some areas of knowledge were at a very low level including: identifying the best method and time for preoperative shaving, and understanding prevention of infection for patients with immunodeficiency disorder. Some areas were less practiced including: assessing a patient's body mass index to monitor nutritional status, and advising patients to shower before surgery with antimicrobial agents. These findings suggest that nurses' knowledge and some certain areas of practice regarding prevention of SSIs need further improvement.¹²

Limitations

Due to the convenience sample, participants were all from a single public general hospital, and the results are therefore difficult to generalise in the wider nursing population.

Conclusion

Nurses are generally involved in all stages of a surgical procedure. Therefore it is essential to have a high level of knowledge and skills regarding the prevention of SSI, and the management and treatment of surgical wounds, supported by continuous education and training.

Despite the high level of knowledge among participants on preventing SSIs, there was a low level of knowledge regarding the full definition of the time of SSI occurrence postoperatively. However, the successful implementation of infection control measures, particularly SSI prevention measures, and continuing education programmes are considered important elements that would improve nurses' knowledge.

Considering that only 39.2% of the participants in this study had attended an educational programme relating to the surgical infections, it is important to provide continuing educational programmes which are accessible to all nursing personnel, irrespective of shift patterns. More up-to-date, in-service training programmes should be organised to enhance nurses' competency regarding prevention of SSIs and eliminate knowledge deficit. **JWC**

Reflective questions

- Can we characterise as an infection that appears 10 months after a surgical operation as a surgical site infection (SSI)?
- What should happen with an elective operation when a remote infection of the surgical site exists?
- When do you remove the hair of the surgical site and what is the method you use?
- What is the most appropriate dressing to use when the surgical wound is healing by secondary infection?

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