



## PERI-OPERATIVE NURSES' KNOWLEDGE ON SURGICAL SITE INFECTION PREVENTION AND ADHERENCE TO WHOS GUIDELINES IN SELECTED HOSPITALS IN OSHIMILI SOUTH LOCAL GOVERNMENT AREA, DELTA STATE

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**ABSTRACT:** Surgical operations are vital procedures in the healthcare delivery system and are becoming one of the most significant causes of mortality and morbidity; high-quality evidence supports several measures to prevent surgical site infection that should be applied with high compliance. The broad aim of the study was to determine perioperative nurses' knowledge on surgical site infections, prevention and adherence to WHO guidelines in Oshimili South LGA of Delta. Cross-sectional survey was conducted on 100 perioperative nurses within the selected hospitals in Oshimili South LGA of Delta State. Analysis was done using descriptive statistics. The study revealed that the majority (76%) of the respondents were females, most of the respondents (46%) had BNSC, and a significant number of the respondents 34.0% had 6-10 years of working experience. More than half of the respondents (60%) considered preoperative showers with antiseptics to be cost effective in preventing surgical site infection, 96.0% of the participants removed jewelry, artificial nails and nail polish reduces the incidence of surgical site infection, and 55% of the respondents also agreed to puncture rate of surgical gloves correlates with the incidence of surgical site infection. The majority of the respondents with a mean score 3.71 utilized strategies such as use of aseptic techniques during surgical wound dressing, 3.58 washed their hands before wearing surgical gloves, while 3.63 sterilized dressing materials before cleaning surgical wounds followed by washing hands before and after changing wound dressing. Respondents with a mean score of 3.56 used face masks during cleaning surgical wound dressing for the prevention of surgical site infections, good level of adherence to WHO's pre-operative guidelines such as washing hands before wearing the surgical gloves, strict adherence to asepsis, surgical consciousness, counting of surgical swabs, sutures, instruments and needles after surgery. 3.36 identified inadequate facilities such as sterilizing equipment and work demand was noted as the challenge with a mean score of 3.17 that perioperative nurses in Oshimili South Local Government Area of Delta State encountered. Conclusively, the knowledge of surgical site infection prevention significantly and positively influenced prevention strategies of surgical site infection used by perioperative nurses in the hospital. It is therefore recommended that continued in-service educational programs should be conducted by the hospital organization to update the evidence based knowledge and practices of nurses.

**KEYWORDS:** Perioperative, Knowledge, Nurse, Preoperative, Adherence.



## INTRODUCTION

### Background to the Study

Surgical operations are vital procedures in the healthcare delivery system and are becoming one of the most significant causes of mortality and morbidity; high-quality evidence supports several measures to prevent surgical site infections that should be applied with high level of compliance (Nina & Cohem, 2023).

Advancement in surgery has played a pivotal role in managing and treating complex health challenges requiring the process. Healthcare Associated Infections (HAI) pose grave danger to patients and increased workload on health workers which ultimately affect the quality of nursing care (Famakinwa, 2014). Surgical site infection (SSI) is one of the most occurring HAI with serious consequences for patients' general condition and survival after a successful surgical intervention. An SSI can be superficial incisional, deep incisional or organ space infection. An SSI refers to an infection that occurs as a result of surgical procedure and within thirty days of the procedure or 365 days if there is an implant (Famakinw *et al.*, 2014).

Surgical site infections (SSIs) are leading causes of HAIs particularly in developing countries (CDC, 2016); the incidence varies from hospital to hospital just as it equally varies from country to country. Available statistics show that the incidence is high in underdeveloped countries compared to developing countries where the incidence has been estimated at between 2.5 and 2.7%. Notable consequences of SSIs include but are not restricted to prolonged hospital stay, high cost of care, increased psychological stress and trauma for patients and their families, low quality of life, increased risk of morbidity as well as increased risk of death. While some factors associated with SSIs are modifiable, others like age are not, thereby calling for increased care among care providers (Dechasa, Adave & Menyeistus, 2023).

Risks for SSIs are classified into intrinsic and extrinsic factors, while the intrinsic factors include advanced age, malnutrition, metabolic diseases, smoking, obesity, hypoxia, immune suppression, and length of preoperation. Pre-operative skin preparation and skin antiseptics, antibiotic prophylaxis, inadequate sterilization of surgical instruments, surgical drains, surgical hands scrubs, and dressing techniques formed the extrinsic factors. All efforts of infection control among healthcare providers notwithstanding, infections remain a major unwanted side effect of surgical operation (Famakinwa *et al.*, 2024).



## MATERIALS AND METHODS

A cross-sectional study was used to gather information on perioperative nurses' knowledge on surgical site infections prevention and adherence to WHO's guidelines in public and private hospitals in Oshimili South LGA of Delta State. A sample size of 110 perioperative nurses participated in the cross-sectional study design in selected hospitals in Asaba Oshimili LGA, Delta State. The sample size was estimated using a set of criteria with 95% confidence level and an estimated proportion of 0.5 positive attitudes among the perioperative nurses. The hospitals and the participants were selected using purposeful sampling techniques between October and December, 2024.

Following the participant oral informed consent, the perioperative nurses who were within the ages of 18 years and 50 years notnsge, 1 year or more than one year working experience, and nurses who voluntarily participated and gave their consent were included to participate in the study.

### A. Study Instrument

The research instrument was a research questionnaire titled: Perioperative Nurses' Knowledge on Surgical Site Infection Prevention and Adherence to WHO's Guidelines in Selected Hospitals in Oshimili South LGA of Delta State. The research questionnaire consisted of 44 question items which were divided into Sections A to E. Section A focused on the demographic characteristics of the respondents. Section B elicited nurses' knowledge on surgical site infection; Section C elicited the strategies nurses utilize to prevent surgical site infection in public hospitals in Oshimili South LGA of Delta State. Section D elicited the extent nurses adhere to the guidelines provided by WHO to prevent surgical site infection and Section E elicited challenges nurses encounter in practicing the guidelines to prevent surgical site infection in Public hospitals in Oshimili South LGA of Delta State.

### B. Statistical Data Analysis

The IBM Statistical Package for the Social Sciences (SPSS) version 26.0 was employed in conducting all the analyses of this study.

Descriptive methods were employed in analyzing the data collected through the questionnaire. The descriptive statistical approaches which include frequency distributions, percentages, mean, Kruskal Wallis and standard deviation, were used to address the objectives of the study while a Kruskal Wallis test and Chi-square model were used to test the research hypotheses.

The mean and standard deviations of both dependent and independent variables were used to describe the characteristics of all the variables.

This study used a test-retest method to ensure the reliability of the instrument. A sample of 20 respondents within the population who were not part of the study was chosen to complete the instrument two times over a period of five (5) days. Twenty perioperative nurses working in General Hospital, Ibusa, Delta State were used for the pilot test. Cronbach alpha statistical package was used to establish the reliability coefficient. A coefficient value of 0.82 was obtained. The high coefficient suggests that the instrument was reliable for the study.



## RESULTS

**Table 4.1: Demographic Variables of the Participants**

n = 100

Group	Variables	Frequency	percentage
Gender	Male	24	24
	Female	76	76
Age ranges	20-25 years	9	9.0
	26-30 years	10	10.0
	31-35 years	32	32.0
	36-40 years	20	20.0
	>40 years	29	29.0
Highest education attained	RN	21	21.0
	RM	27	27.0
	BNSC	46	46.0
	MSc	5	5.0
	PhD	1	1.0
Work experience	1-5 years	26	26.0
	6-10 years	34	34.0
	11-15 years	20	20.0
	16-20 years	10	10.0
	>20 years	10	10.0

The result in Table 4.1 shows that 76% of the respondents are females while 24% are males. The response on highest education attained indicated that 46% of the respondents have BNSC, 27% are registered midwives, and 21% are registered nurses, among others. Response on work experience indicated that 34% of the respondents have 6-10 years work experience, 11-15 years have 20% work experience, and 26% have 1-5 years work experience, among others.



## Objective 1: Perioperative Nurses' Knowledge on Surgical Site Infection

**Table 4.2: Knowledge on SSI Prevention by Perioperative Nurses**

Variable	Yes	No
Staff exiting and re-entering the theatre affect the incidence of surgical site infection.	50 (50%)	50 (50%)
Preoperative showers with antiseptics are cost effective in preventing surgical site infection.	60 (60%)	40 (40%)
Removal of jewelry, artificial nails and nail polish reduces the incidence of surgical site infection.	96 (96%)	4 (4%)
Puncture rate of surgical gloves correlate with the incidence of surgical site infection.	55 (55%)	45 (45%)
Administration of prophylactic antibiotics help in preventing surgical site infection.	89 (89%)	11 (11%)
Malnourished patients and relatively healthy persons have an equal chance of developing surgical site infection.	16 (16%)	84 (84%)
Increased pain and discharge from wound site indicate surgical site infection.	90 (90%)	10 (10%)
Time period of operation has the effect of developing surgical site infection.	35 (35%)	65 (65%)
Prolong preoperative hospitalization increases chances of surgical site infection	43 (43%)	57 (57%)

**n = 100**

Table 4.2 displays the results of perioperative nurses' knowledge on surgical site infection. The findings revealed that half (50%) of the respondents agreed that staff exiting and re-entering the theatre affect the incidence of surgical site infection; half (50%) equally disagreed. More than half of the respondents (60%) considered preoperative showers with antiseptics to be cost effective in preventing surgical site infection. However, the majority of the participants agreed that removal of jewelry, artificial nails and nail polish reduces the incidence of surgical site infection, while 4% disagreed. More than half (55%) of the respondents also agreed that the puncture rate of surgical gloves correlates with the incidence of surgical site infection, but 45% of the participants disagreed. The majority of the participants (89%) agreed administration of prophylactic antibiotics helps in preventing surgical site infection, but 11% of the participants objected. Sixteen percent (16%) of the respondents agreed that malnourished patients and relatively healthy persons have equal chances of developing surgical site infection; meanwhile, the majority of the participants (84%) disagreed. Ninety percent (90%) of the participants agreed that increased pain and discharge from wound site indicate surgical site infection while (10%) disagreed. One-third of the respondents accepted that the time period of operation has an effect on developing surgical site infection, while more than half (65%) of the respondents disagreed. More than one-third (43%) of the participants accepted that prolonged preoperative hospitalization increases the chances of surgical site infection; however, 57% objected.



## Objective 2: Strategies Perioperative Nurses Utilize to Prevent Surgical Site Infection in the Hospital

**Table 4.3: Strategies Utilized by Perioperative Nurses to Prevent SSIs**

n = 100

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Identification of patient using case note at the red line	100	1	4	2.89	.886
Washing of hands before and after changing wound dressing touching the surgical site	100	1	4	3.58	.741
Washing hands before wearing the surgical glove	100	2	4	3.64	.595
We perform preoperative shaving right before surgery	100	1	4	3.28	.753
Administering preoperative prophylactic antibiotics within one hour before surgery	100	2	4	3.48	.559
Advising patients to take preoperative showering bathing with antimicrobial agent	100	1	4	3.12	.820
Sterilizing dressing material before cleaning surgical wound dressing.	100	2	4	3.63	.596
Use of aseptic techniques during surgical wound dressing	100	2	4	3.71	.574
Use face mask during during surgical wound dressing	100	2	4	3.56	.556
Use of appropriate interactive dressing to manage surgical wounds that are healing by secondary intention	99	2	4	3.24	.640
Inspecting hands and arms for cuts and abrasions	98	2	4	3.15	.694
Teamwork spirit and effective communication among the team members	100	2	4	3.40	.667
Steam sterilization is used for all heat resistant surgical instruments	100	1	4	3.24	.780
Total average score				3.38	0.682

The strategies perioperative nurses utilize to prevent surgical site infection in the hospital were graded using the following: Strongly Agree = 4, Agree = 3, Disagree = 2, and Strongly Disagree = 1. The various individual mean scores of the strategies perioperative nurses utilize to prevent surgical site infection in the hospital were shown in Table 4.3 with the total mean score of 3.38. The good strategy perioperative nurses utilize to prevent surgical site infection in the hospital was assumed at above 2.5 of total mean score, while the poor knowledge on surgical site infection was assumed at below 2.5 of the total mean score. Therefore, the majority of the respondents utilized aseptic techniques during surgical wound dressing, washing hands before wearing the surgical gloves, sterilizing dressing material before cleaning surgical wound dressing, washing hands before and after changing wound dressing touching the surgical site, and the use of face mask during cleaning of surgical wound dressing.





### Objective 3: Extent to Which Perioperative Nurses Adhere to the Guidelines Provided by WHO to Prevent Surgical Site Infection

**Table 4.4: Adherence to WHO Guidelines by Perioperative Nurses**  
n = 100

Variables	N	Mini mu m	Maxi mum	Mean	Std. Deviation
Washing hands before wearing surgical glove	100	2	4	3.73	.479
Performing preoperative shaving right before surgery	100	1	4	3.39	.732
Administering preoperative prophylactic antibiotic within one hour before surgery	100	2	4	3.53	.643
Advising patients to take preoperative showering/bathing with antimicrobial agent	100	1	4	2.98	.887
Sterilizing dressing material before cleaning surgical wound dressing	100	2	4	3.60	.603
Exemption of staff with upper respiratory tract infection intra-operative	100	1	4	3.32	.909
Strict adherence to asepsis	100	1	4	3.65	.557
Control of visitors and workers movement (traffic)	100	1	4	3.40	.696
Teamwork spirit and effective communication among the team members	100	1	4	3.46	.658
Surgical consciousness	99	2	4	3.64	.597
Sterile dressing of incision site post operative	100	1	4	3.75	.557
Counting of surgical swab, sutures, instruments and needles after surgery.	100	1	4	3.60	.636
Ensuring standard and excellent clearing and sterilization process of surgical bundles and instruments	100	1	4	3.55	.657
Prevention of specimen loss through adequate management	100	1	4	3.07	.844
Participating in surgical team debriefing after running a day list	100	1	4	2.98	.841
Site marking is important to prevent wrong site	100	1	4	3.31	.849
Total Average Score				3.44	0.696

The extent to which perioperative nurses adhere to the guidelines provided by WHO to prevent surgical site infection were graded using the following: Very Great Extent = 4, Good Extent = 3, Low Extent = 2 and Very Low Extent = 1. The various individual mean scores of the extent to which perioperative nurses adhere to the guidelines provided by WHO to prevent surgical site infection were shown in Table 4.4 with the total mean score of 3.44. The good adherence was assumed at above 2.5 of the total mean score, while the poor adherence was assumed at below 2.5 of the total mean score. There is a high level of adherence to WHO guidelines among the participants towards SSI infection prevention.



#### Objective 4: Challenges Nurses Encounter in Practicing the Guidelines to Prevent Surgical Site Infection

**Table 4.5: Challenges Encountered by Perioperative Nurses in Practicing SSI Prevention**  
**n = 100**

Variables	n	Minimum	Maximum	Mean	Std. Deviation
Inadequate facilities such as sterilizing equipment	100	1	4	3.56	.795
Work demand	100	1	4	3.17	.888
Discouragement by colleagues	100	1	4	2.80	.888
Poor attitude by nurses	100	1	4	2.87	.917
Use of incorrect aseptic technique	100	1	4	3.05	1.038
Total Average Score	100	1	4	3.09	0.905

The challenges nurses encounter in practising the guidelines to prevent surgical site infection were graded using the following scores: Strongly Very Great Extent = 4, Good Extent = 3, Low Extent = 2 and Very Low Extent = 1. The various individual mean scores of the challenges nurses encounter in practising the guidelines to prevent surgical site infection were shown in Table 5 with a total mean score of 3.09. The presence of high levels of these challenges was assumed at above 2.5 of the total mean score, while the presence of low levels of these challenges was assumed at below 2.5 of the total mean score.

**Research Hypothesis 1:** There would be no statistical significant relationship between perioperative nurses' knowledge on surgical site infection prevention based on educational level.

**Table 4.6: Relationship Between Perioperative Nurses' Knowledge and Educational Level**  
**n = 100**

	Educational level	N	Mean Rank H	Kruskal-Wallis	
Perioperative knowledge on surgical site infection	RN	21	42.38	4.860	(4); $p=0.302$
	RM	27	59.54		
	BNSc	46	49.77		
	MSC	5	46.00		
	PhD	1	33.00		

Table 4.6 reveals that educational level had no statistically significant relationship with perioperative nurses' knowledge on surgical site infection prevention.

**H<sub>01</sub>:** There would be no statistically significant relationship between perioperative nurses' knowledge on surgical site infection prevention based on educational level.

**Statistics:** Kruskal-Wallis H: 4.860 (4);  $p = 0.302$ .





**Verdict:** Accept the null hypothesis, which revealed that educational level had no statistical significant relationship with perioperative nurses' knowledge on surgical site infection prevention.

**Research Hypothesis 2:** There would be no statistically significant relationship between perioperative nurses' knowledge on surgical site infection prevention based on age.

**Table 4.7: Relationship Between Perioperative Nurses' Knowledge on SSI Prevention with Their Age**

n = 100					
	Age	N	Mean Rank	Kruskal-Wallis H	
<b>Perioperative knowledge on surgical site infection</b>	20-25 years	9	72.33	10.206 (4); p=0.037	
	26-30 years	10	57.70		
	31-35 years	32	41.84		
	36-40 years	20	44.63		
	Above 40 years	29	54.84		

Table 4.7 shows that age had a statistically significant relationship with perioperative nurses' knowledge on surgical site infection prevention.

**H<sub>02</sub>:** There would be no statistically significant relationship between perioperative nurses' knowledge on surgical site infection prevention based on age.

**Statistics:** Kruskal-Wallis H: 10.206 (4);  $p = 0.037$ .

**Verdict:** Reject the null hypothesis indicating that age had a statistically significant relationship with perioperative nurses' knowledge on surgical site infection prevention.



**Research Hypothesis 3:** There would be no statistically significant relationship between the extent of perioperative nurses' adherence to guidelines provided by WHO to prevent surgical site infections and work experience.

**Table 4.9: Extent of Perioperative Nurses' Adherence to WHO Guidelines in Relation to Work Experience**

**n = 100**

	<b>Work experience</b>	<b>N</b>	<b>Mean Rank</b>	<b>Kruskal-Wallis H</b>
Adherence to guidelines provided by WHO to prevent surgical site	1-5 years	26	43.96	3.159 (4); $p = 0.532$
	6-10 years	34	53.87	
	11-15 years	20	56.85	
	16-20 years	10	49.00	
	Above 20 years	10	44.85	

Table 4.9 reveals that there was no statistically significant relationship between the extent of perioperative nurses' adherence to guidelines provided by WHO to prevent surgical site infections and work experience.

**Ho:** There would be no statistically significant relationship between the extent of perioperative nurses' adherence to guidelines provided by WHO to prevent surgical site infections and work experience.

**Statistics:** Kruskal-Wallis H: 3.159 (4);  $p = 0.532$ .

**Verdict:** Accept the null hypothesis, which revealed that work experience had no statistically significant relationship with the extent of perioperative nurses' adherence to guidelines provided by WHO to prevent surgical site infections.

**Research Hypothesis 4:** There would be no statistically significant relationship between the extent of perioperative nurses' adherence to the guidelines provided by WHO to prevent surgical site infections and their gender.

**Table 4.8: Adherence to WHO Guidelines by Gender**

<b>Gender</b>	<b>Adherence to WHO guidelines</b>	<b>Not adherence to WHO guidelines</b>	<b>Total</b>	<b>X<sup>2</sup></b>	<b>df</b>	<b>p-value</b>
Male	16 (66.7%)	8 (33.3%)	24	0.23	1	0.633
Female	46 (60.5%)	30 (39.5%)	76			
Total	62 (61.4%)	38 (38.6%)	100			

The table above shows the result of inferential statistics using Chi-square to test the significant relationship between gender and adherence to WHO's guidelines in preventing surgical site infections among perioperative nurses.



The Chi-square test reveals that there is no significant relationship between the extent of perioperative nurses' adherence to WHO's guidelines and their gender ( $\chi^2 = 0.23$ ,  $df = 1$ ,  $p\text{-value} = 0.633$ ).

## DISCUSSION OF MAJOR FINDINGS

### Demographic Data of the Participants

As revealed in Table 4.1, 76% of the respondents are females while 24% are males. Response on higher education attained indicated that 46% of the respondents have BNSC, 27% are registered midwives, and 21% are registered nurses, among others. Response on work experience indicated that 34% of the respondents have 6-10 years work experience, 11-15 years have 20% work experience, and 26% have 1-5 years work experience, among others.

### Peri-Operative Nurses' Knowledge on Surgical Site Infection Prevention and Adherence to WHO's Guidelines

As displayed in Table 4.2, the findings revealed that half (50%) of the respondents agreed that staff exiting and re-entering the theatre affect the incidence of surgical site infection; half (50%) equally disagreed. More than half of the respondents (60%) considered preoperative showers with antiseptics to be cost effective in preventing surgical site infections. However, the majority of the participants agreed that removal of jewelry, artificial nails and nail polish reduces the incidence of surgical site infections, while (4%) disagreed. More than half (55%) of the respondents also agreed that puncture rate of surgical gloves correlate with the incidence of surgical site infection but 45% of the participants disagreed. The majority of the participants (89%) agreed that the administration of prophylactic antibiotics helps in preventing surgical site infections, but 11% of the participants objected. Sixteen percent (16%) of the respondents agreed that malnourished patients and relative healthy persons have equal chances of developing surgical site infections; meanwhile, the majority of the participants (84%) disagreed. Ninety percent (90%) of the participants agreed that increased pain and discharge from wound site indicate surgical site infection, while (10%) disagreed. One-third of the respondents accepted that time period of operation has an effect in developing surgical site infections, while more than half (65%) of the respondents disagreed. More than one-third (43%) of the participants agreed that prolonged preoperative hospitalization increases the chances of surgical site infection; however, 57% rejected it. This shows a high level of knowledge of surgical site infections prevention among perioperative nurses.

### Strategies Peri-Operative Nurses Utilize to Prevent Surgical Site Infection in the Hospital

Results from Table 4.3 show that respondents utilize strategies such as use of aseptic techniques during surgical wound dressing, washing hands before wearing surgical gloves, and sterilizing dressing materials before cleaning surgical wound, followed by washing hands before and after changing wound dressing touching the surgical site and the use of face masks during cleaning surgical wound dressing for prevention of surgical site infections.

This is in consonance with Ding et al. (2017) who examined nursing practices to prevent postoperative wound infection and reported that more than one-third of the surgical nurses did not use clean gloves properly, as against Fajemilelum et al. (2016) who reported that 57% of



the respondents were using WHO's surgical safety checklist with emphasis on the fact that surgical hand preparation should be performed either by scrubbing with a suitable anti-microbial soap and water before donning sterile gloves.

Also in consonance with the result, the findings of Ghadamgahi et al. (2011) showed that the majority of the personnel understood the threat and had a positive attitude towards hospital infection control methods. A study by Allah et al. (2019) showed similar results and a study by Rasmeggiam et al. (2010) also demonstrated that most of the healthcare workers (94%) practice infection control programmes.

### **Extent to Which Perioperative Nurses Adhere to Guidelines Provided by WHO to Prevent Surgical Site Infections**

The result in Table 4.4 shows that perioperative nurses in Oshimili South Local Government Area of Delta State had a good level of adherence to WHO's preoperative guidelines, such as washing hands before wearing the surgical gloves, strict adherence to asepsis, surgical consciousness, and counting of surgical swabs, sutures, instruments and needles after surgery. This is in agreement with the study carried out by Famakinwa et al. (2014) on reported precautionary measures adopted by the majority of the nurses (70%) in Obafemi Awolowo University Teaching Hospital, Ile-Ife which supported strict adherence to asepsis and sterile dressing of incision sites, as well as the findings of Boyce and Pitt (2012) which reveal that health workers place higher value on adherence to asepsis by washing hands more with antiseptic for surgical patients.

According to Harris et al. (2018), maintaining strict adherence to procedure and a clear delivery of consistent and optimal health outcome.

### **Challenges Peri-Operative Nurses Encounter in Practicing WHO's Guidelines To Prevent Surgical Site Infections**

The results in Table 4.5 show that inadequate facilities such as sterilizing equipment and work demand were noted as the challenges with the highest mean scores that perioperative nurses in Oshimili South Local Government Area of Delta state encountered. The finding is similar to that of the study carried out by Famakinwa et al. (2014) that the majority of the participants identified work demand and poor attitude of nurses (79%) as the most common factor in practicing aseptic techniques.

### **Hypotheses**

#### **Hypotheses. Hypothesis 1: Relationship Between Perioperative Nurses' Knowledge and Educational Level**

Table 4.6 reveals that educational level had no statistically significant relationship with perioperative nurses' knowledge on surgical site infections prevention.

Statistics: Kruskal-Wallis H: 4.860 (4);  $p = 0.302$ .

#### **Hypothesis 2: Relationship Between Perioperative Nurses' Knowledge on SSI prevention and Their Age**



Table 4.7 shows that age had a statistically significant relationship with perioperative nurses knowledge on surgical site infections prevention.

Statistics: Kruskal-Wallis H: 10.206 (4);  $p = 0.037$ .

### **Hypothesis 3: Extent of Perioperative Nurses' Adherence to WHO's Guidelines in Relation to Work Experience**

Table 4.9 reveals that there was no statistically significant relationship between the extent of perioperative nurses' adherence to the guidelines provided by WHO to prevent surgical site infections and work experience.

Statistics: Kruskal-Wallis H: 3.159 (4);  $p = 0.532$ .

### **Hypothesis 4: Adherence To WHO's Guidelines by Gender**

The result of inferential statistics using Pearson's Chi-square to test the significant relationship between gender and adherence to WHO's guidelines in the prevention of surgical site infections among perioperative nurses'.

The Chi-square test reveals that there is no significant relationship between the extent of perioperative nurses' adherence to WHO's guidelines and their gender ( $\chi^2 = 0.23$ ,  $df = 1$ ,  $p\text{-value} = 0.633$ ).

## **CONCLUSION**

Conclusively, perioperative nurses displayed a high level of knowledge and practice, and adherence to prevention of surgical site infections in selected hospitals in Oshimili South Local Government Area of Delta State. However, some of the challenges encountered by perioperative nurses are inadequate facilities, work demand, discouragement by colleagues, and poor attitude by nurses, among others. The knowledge of surgical site infection prevention significantly and positively influenced the prevention strategy of surgical site infections used by perioperative nurses in the hospital.

## **RECOMMENDATIONS**

Based on the findings of this study, the researchers made the following recommendations:

- To improve the quality of care and patient safety from suffering surgical site infections, continued in-service educational programs should be conducted by the hospital organization to update the evidence based on knowledge and practices of nurses. The hospital administration should provide standard guidelines for the prevention of surgical site infections for nurses in the surgical departments.
- The nursing curriculum should be adjusted to include the prevention of surgical site infections in the contents.



- One of the significant problems affecting adherence to surgical site infection guidelines is inadequate facilities. Therefore, necessary facilities required to adhere to surgical site infections should be made available at all times in hospitals.

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