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Nurses Knowledge, Practice, and Associated Factors Toward Prevention of Surgical Site Infection in Benishangul Gumuz Hospitals Northwest Ethiopia 2021

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Abstract: Introduction: Surgical Site Infection (SSI) is one of the most common types of Healthcare associated infection which is considered to be 20% to 25% of all infections. It is an infection which occurs within 30 days after a surgical procedure or up to one year in those surgical patients in which an implant has been placed in an organ. SSI were the leading infections in developing country and strikingly higher proportions recorded in developed countries. Objective. nurses' knowledge, practice, and associated factors towards surgical site infection prevention in Benishangul Gumuz Regional north West Ethiopia 2021. Methods: A facility based cross-sectional study was conducted among staff nurse in Benishangul Gumuz regional hospitals, western Ethiopia from janury 1st to October 1st 2021. A total of 218 nurses were recruited consecutively as study subjects. Data was collected using structured questionnaire. The collected data was analyzed using SPSS version 20.0 and descriptive statistic was used to indicate the frequency and percentage of variables and chi-square was used to determine the predictors of nurse's knowledge and practice at P values <0.05 was considered determine significant association. Result: about two handed eighteen study subject were interviewed the finding shows that 51.8% of nurse were not knowledgeable and around 47.2% of nurses were having poor practice toward SSI prevention. Chi-square test shows that variables like marital status, working period and work experience has got association with nurses' knowledge and practice toward SSI prevention. finally training standard SSI prevention guideline close monitoring is required from respective facility and stakeholders.

Keywords: Surgical Site, Practice, Knowledge

1. Introduction

1.1. Background of the Study

Surgical site infection is an infection which occurs within 30 days after a surgical procedure or up to one year in those surgical patients in which an implant has been placed in an organ which was opened or manipulated during operation [1].

A number of risk factors are known to increase the risk for SSIs, including obesity, advanced age, diabetes mellitus, malnutrition, prolonged preoperative stay, infection at a remote site, duration of surgery, surgery technique, presence of drains, inappropriate use of antimicrobial prophylaxis, perioperative temperature, and poor postoperative glycemic control many of these are beyond practitioner control, but optimizing perioperative conditions can certainly help decrease infection risk [2, 3].

Healthcare associated infections are major healthcare problems, Millions of people were affected each year worldwide [4]. Surgical Site Infection (SSI) is one of the most common types of Healthcare associated infection which is considered to be 20% to 25% of all Healthcare-Associated infections [5]. In Africa, surgical site infections were the leading infections in hospitals (pooled cumulative incidence of 5.6 per 100 surgical procedures), strikingly higher than proportions recorded in developed countries. Another study

done in Africa indicated cumulative incidence of SSIs ranged from 2.5 to 30.9% [6].

In Ethiopia, incidence rate of SSIs ranges from 10.9 to 75% [7]. The World Health Organization (WHO), in its guidelines has set a number of recommendations towards prevention of surgical site infection. By the implementation of these guidelines nurses can prevent their patients from surgical site infection and can promote the health of patients. Recommendations of these guidelines include avoidance of pre-operative hair removal, advice for pre-operative showering, hand hygiene, appropriately and timely administration of antibiotics, pre and post-operative glycemic control, wound management and surgical site preparation [8].

It is estimated that 25% of infections can be prevented by nurses by implementing standard precautions during care of the surgical patients. So, nurses can help to prevent surgical site infection, decreases patients economic burden as well as hospitals expenses and enhance quality of life of the patients by the application of knowledge and recommended practices [9].

Nurses are the ones who provide constant care of in-patients and thus, they can be the most reliable persons to spread their knowledge and practices for the health and wellbeing of the people, humankind or nation. From the beginning, nursing is a profession which has been working to promote peoples "health, relieve their pain and misery, advocate for the weak and the susceptible and educate the people to attain a better quality of life [10].

Florence Nightingale was the first infection control nurse. She established the relationship between nursing and infection control in 1854 in the period of the Crimean war where she provided her services to the victims of the war in a military hospital of Scutari. The hospital's condition was very poor, where she claimed that if we will improve the hygienic conditions of the hospital we can reduce the number of deaths [11].

This study will provide information to design strategies to prevent and control the transmission SSI. Because Nurses lacked the required knowledge about prevention of SSIs and the majority of them did not practice properly according to evidence-based guidelines and recommendations.

This study will provide information needed to improve the knowledge of nurses and their practice in surgical site infection prevention.

However, nurse's knowledge and practice regarding surgical site infection prevention are not well researched in B/Gumuz regional state.

Therefore, assessing nurses' knowledge gaps and practice as well as identifying the associated factors to prevent surgical site infection will give baseline information regarding surgical site infection for the region and for further development of research.

1.2. Conceptual Framework

Conceptual frame work for this research has been prepared by principal investigator by reviewing different articles and presented in figure one below 1.
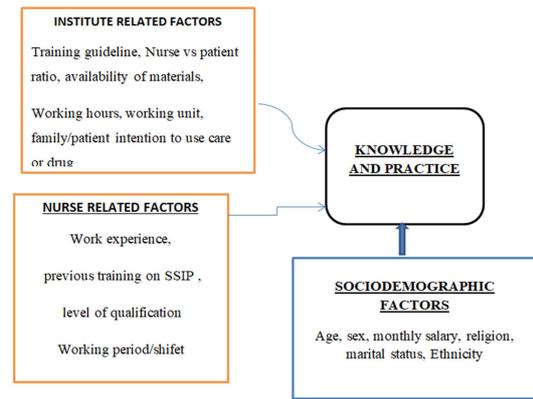

Figure 1. *Conceptual frame work on assessment of nurses knowledge, practice and associated factors in Benishangule Gumuze regional state hospitals western Ethiopia developed by PI by reviewing different literatures in 2019 [1- 3, 11-14].*

1.2.1. General Objective

NURSE knowledge, practice, and associated factors towards surgical site infection prevention in Benishangul Gumuz Hospitals north West Ethiopia 2021.

1.2.2. Specific Objective

To determine the level of knowledge of nurses towards surgical site infection prevention.

To determine the practice of nurses towards surgical site infection prevention practice.

To identify associated factors towards of nurses' knowledge on surgical site infection prevention.

To identify associated factors towards of nurses' practice on surgical site infection prevention.

2. Methods and Materials

2.1. Study Area and Period

Benishangul Gumuz regional state has an estimated area of 50,699 square kilometers, which is located in western part of Ethiopia with total population of around 1.127 million. the study was conducted in Assossa general hospital paw general hospital and bulen hospital having total the total number of study population going to be 256. As of data from human resource management of the respective hospitals which is collected in the year 2019.

Study design: Institution based cross-sectional study design was employed.

Source population: All nurses working as staff in Benishangul Gumuz regional state hospitals.

Study population: Nurses working in the selected Benishangul Gumuz regional state hospitals and those fulfilling inclusion criteria.

2.2. Eligibility Criteria

Nurses actively working in the four Benishangul Gumuz regional state hospital who were willing to participate and available during study period. And Nurses who are in annual leave, works less than six month and seriously ill during data

collection period in the selected hospitals was excluded from the study.

2.3. Sample Size Determination

The Sample size was calculated by using single population proportion formula with Epi Info-7 software to obtain required sample size with the following assumption. So, considering 95% confidence interval (CI) 5% margin of error and 50% proportion. Based on this the final sample size was 384. Despite this fact the total number of source population is lesser than the calculated sample size, so that data was collected from all nurses in the selected hospital that fulfill the inclusion criteria, which means the total sample size was 256.

2.4. Sampling Procedure

There are four hospitals found in Benishangul Gumuz regional sate which has a total number of 256 nurses, so purposive sampling technique was used to collect data from nurses who were working in each hospital and that fulfill the inclusion criteria and available during the time of data collection.

Dependent Variable: Knowledge of nurses on: risk factors, complications and Patients at risk of surgical site infection and practice of nurse on surgical site infection prevention.

Independent variables: Socio demographic characteristics: (age, sex, monthly income, ethnicity, religion &marital status).

Facility related factors & Nurses related factors (level of qualification, Work experience, working unit, nurse to patient ratio, equipment or materials, working hours, working period/shift, previous training on SSI prevention, and presence of guideline for SSI prevention, and patient /family intention to use healthcare service or prescribed drug in the respective hospital).

3. Operational Definitions

Not knowledge: - Those study participants who scored below the mean out of prepared knowledge questions was considered as not knowledgeable [1, 18].

Poor practice: That study participant who scored below mean out of the prepared practice questions [1, 18].

The nurse-to-patient ratio is the number of nurse to patients in a given working unit in the hospital for example nurse-to-patient ratio in an emergency department must be 1:4 or fewer at all times that patients are receiving treatment [22].

3.1. Data Collection Tool

structured and pretested self-administered questionnaire

was used to collect the data Nurse's knowledge regarding the prevention of SSIs was measured by 11 multiple choice questions in which only one correct answer was required. And practice in the prevention of SSIs was gauged by 20 items in which responses was answered in a 5-point Likert scale (never practice, rarely, sometimes practice, often practice and always practice). Twelve (12) data collectors who had BSc degree in public health and three supervisors working in Assossa university were selected.

3.2. Data Quality Assurance

During data collection, both supervisors and data collectors was checked the data for its completeness and missing each item in every moment. training was given for data collectors and supervisors and pretest was made on 5% of the total sample size. Participants was identified from each working unite systematically and approaching privately on arrival.

3.3. Statistical Analysis

The collected data was entered into Epi info version 7 software and exported to SPSS version 20. Descriptive statistics was used for all demographic and associated factors. Chai square test was used and statistically significance association level was sated at <0.05 with confidence level of 95%. Individuals who scored below the mean was classified as having poor knowledge and practice.

4. Result

4.1. Sociodemographic Characteristic of the Study Subject

The expected study subject for this survey in Benishangul gumuz hospital was all nurses actively working in the selected hospitals which is 256. out of this about 218 (85.1) percent response rate. From this the mean age of the study subject was found to be 28.6+ (5 standard deviation) and 109 (50.2%) of the study subject were female. Regarding religion orthodox 115 (66%) followed by Muslim 42 (19.3%), ethnicity the highest number was Amhara 72 (33%) followed by Oromo 41 (18.8%) and majority 135 (61.9%) of the study subject were married, about 75 (34.4%) the study subject were single and the remaining 8 (3.7%) subjects were divorced. according to our research about 141 (64.7%), participant were degree holder whereas 76 (34.9%) study subject were diploma holder and the rest 1 (0.5%) were master's holder. another variable presented here below in (table 1).

Table 1. Sociodemographic characteristics of study subject in Benishangul gumuz regional hospitals, northwest Ethiopia 2021.

Variables	Category	frequency	Percentage
Age	20-29	147	67.4
	30-39	62	28.4
	>=40	9	4.1
Work experience	<1 years	22	10.1
	1-5 years	88	40.4
	>=5 years	108	49.5
Working unit	Medical	4	1.8
	Surgical	43	19.7

Variables	Category	frequency	Percentage
	Pediatrics	22	10.1
	Gyen/ obse	76	34.4
	Other	73	33.5
	<2500	13	6
Monthly income	2500-5000	112	51.4
	>5000	93	42.7
	4	58	26.6
	5-8	109	50
Nurse to patient ratio	9-12	35	16.1
	>12	16	7.3
Equipment for SSI prevention	Yes	124	56.9
	No	94	43.1
Guideline on SSI	YES	89	40.8
	NO	129	59.2
Training on SSI prevention	YES	36	16.5
	NO	182	83.5

4.2. Nurse Knowledge Toward Surgical Site Infection Prevention in Benishangul Gumuz Reginal Hospitals North West Ethiopia 2021

Out of the study subject about 113 (51.8%) were not knowledgeable toward surgical site infection prevention. And the mean result of nurse knowledge on prevention of surgical site infection was found to be 1.52+0.50 (standard deviation) the remaining study subject were found to be knowledgeable toward prevention of surgical site infection. concerning preoperative shaving method about 115 (52.8%) study participant were using razor followed by 60 (27.5%) using cream method were as about 9 (4.1%) were using clipper method. other finding was displayed here below in table 2.

Table 2. Knowledge of nurse toward prevention of surgical site infection prevention in Benishangul gumuz regional hospitals northwest Ethiopia 2021.

Variable	Category	Frequency=218	Percentage (%)
	Razor method	115	52.8
best method for pre-operative shaving?	cream method	60	27.5
	Trimming	34	15.6
	Clipper	9	4.1
	Night	35	16.1
best time preoperative hair removal?	Morning	66	30.3
	Immediately preop	117	53.7
	60 minutes before	131	60.1
Time for administer antibiotic prophylaxis?	2 hrs before	38	17.4
	15 minutes before	49	22.5
	Reduce microbial skin infection	41	18.8
purpose of pre-operative showering?	promote comfort	7	3.2
	prevent bacterial growth	6	2.8
	All	164	75.2
best skin agent for preoperative showering to prevent surgical site infection?	Tap water	44	20.2
	Anti-bacterial soap	149	68.3
	Herbal soap	25	11..5
best antiseptic solution to disinfect the surface of dressing trolley?	Sava Lon solution	28	12.8
	0.5% chloroxidine	132	60.6
	Ethyl alcohol with 0.5 chloroxidine	58	26.6
correct purpose of surgical hand washing?	Reduce risk of SSI	173	79.4
	Increase SSI	19	8.7
	reduce hand dryness	26	11.9
When do you change the surgical dressing?	24 hrs after surgery	87	39.9
	dressing material with exudate	5	2.3
	surgeon order	126	57.8
	Characteristics	58	26.6
select dressing solution? based on wound	size of the wound	11	5
	depth of the wound	7	3.2
	All	142	65.1
correct diagnose of surgical site infection?	occurs within 30 days	37	17
	culture negative	24	11
	fever within 3 days	151	72.
	No fever	47	21.6
good sign of no surgical site infection?	No discharge, edema	9	4.1
	No discharge	11	5
	All	151	69.3

4.3. Practice of Nurses Toward Surgical Site Infection Prevention in Benishangul Gumuz Reginal Hospitals North Wert Ethiopia 2021

Out of 218 study subject about 103 (47.2%) study subject were having poor practice on preventing surgical site infection the mean result of nurses practice was found to be 1.47+0.5 (standard deviation). Out of this about 12 (5.5%) were never practice hand washing before and after dressing and touching surgical wound on the other hand about 100 (45.9%) study subject were keep washing their hand before and after dressing and touching surgical wound. other data were displayed here below (table 3).

Table 3. Nurse practice toward prevention surgical site infection in Benishangul gumuz regional hospitals northwest Ethiopia 2020.

Variables	Never practice	rarely practice	Sometimes practice	Often practice	Always practice
I Wash my hands before and after changing the dressing and touching the surgical site	12 (5.5%)	10 (4.7%)	58 (26.6%)	38 (17.4%)	100 (45.9%)
I wash my hand before wearing the surgical glove	8 (3.7%)	24 (11%)	45 (20.6%)	44 (20.2%)	97 (44.5%)
I perform preoperative shaving right before surgery	31 (14.2%)	13 (6%0	37 (17%)	41 (18.8%)	96 (44%)
I administer preoperative prophylactic antibiotic within one hour before surgery	8 (3.7%)	18 (8.3%)	49 (22.5%)	44 (20.2%)	99 (45.4%)
I advise my patient to take preoperative showering bathing with anti-microbial agent	27 (12.4%)	12 (5.5%)	58 (26.5%)	37 (17%)	84 (38.5%)
I use sterilized dressing material for cleaning surgical wound dressing	4 (1.8%)	15 (6.9%)	26 (11.9%)	12 (5.5%)	161 (73.9%)
I use an aseptic technique during surgical wound dressing	13 (6%)	6 (2.8%)	22 (10.1%)	19 (8.7%)	158 (72.5%)
I Asses and monitor surgical site condition	2 (0.9%)	15 (6.9%)	15 (6.9%)	35 (16.1%)	151 (69.3%)
I separate infected dressing from non- infected dressing	22 (10.1%)	1 (0.5%)	19 (8.7%)	23 (10.6%)	153 (70.2%)
I use face mask& glove during cleaning surgical wound dressing	6 (2.8%)	19 (8.7%)	39 (17.9%)	33 (15.1%)	121 (55.5%)
I perform clean and disinfect surface of the dressing trolley with anti-septic solution.	9 (4.1%)	10 (4.6%)	36 (16.5%)	39 (17.9%)	124 (56.9%)
I discard the soiled materials in the proper place after performing wound dressing	6 (2.8%)	12 (5.5%)	28 (12.8%)	34 (15.6%)	138 (63.3%)
I advise my patient to take pre-operative showering 6-12 hours before surgery	20 (9.2%)	22 (10.1%)	33 (15.1%)	39 (17.9%)	104 (47.7%)
Alcohol and chlorhexidine gluconate is most common antimicrobial used in my ward	17 (7.8%)	20 (9.2%)	25 (11.5%)	30 (13.8%)	126 (57.8%)
I perform prescribed glucose test before and after surgery in a diabetic patient	13 (6%)	14 (6.4%0	23 (10.6%)	21 (9.6%)	147 (67.4%)
I advise a malnourished patient to take vegetables and fruits before & after surgery	47 (19.3%)	13 (6%)	52 (23.9%)	38 (17.4%)	73 (33.5%)
I advise a malnourished patient with compromised immune system avoiding contact people who have infections	27 (12.4%)	11 (5%)	69 (31.7%)	51 (23.4%)	60 (27.5%)
I use povidone-iodine and normal saline for cleansing surgical wound dressing	23 (10.6%)	13 (6%)	31 (14.2%)	40 (18.3%)	111 (50.9%)
I learn shaving method from others & apply to pre-operative patients	21 (9.6%)	32 (14.7%)	50 (22.9%)	33 (15.1%)	82 (37.6%)
I advise immunodeficiency disorder patient to maintain personal hygiene	11 (5%)	15 (6.9%)	40 (18.3%)	22 (10.1%)	130 (59.6%)

4.4. Factors Associated with Nurses' Practice Toward Surgical Site Infection Prevention

According to this research find variables like marital status the study subject and working unit of nurse shows statistical association with nurses' practice on prevention of surgical site infection prevention at p-value of <0.05. In the study hospitals and the remaining variable were presented here in table 4 below.

Table 4. Chi-square result of nurses' practice toward surgical site infection prevention in Benishangul gumuz regional state hospital 2021.

Variable	Category	Good practice	Poor practice	Prison chi-square	p-value
Marital status	Single	37	38		
	Married	70	65	7.56	0.023*
	divorced	8	0		
Guideline for SSI prevention	Yes	47	42	0.00	0.55
	No	68	61		
	medical	2	2		
working unit	surgical	24	19		
	Obe/gyene	30	46	10.18	0.037*
	pediatrics	16	6		
	Other unit	43	30		
Working hours	8 hr	94	75	2.48	0.079
	>8 hr	21	28		
Monthly in come	< 2500	8	5		
	2500-5000	54	58	1.99	0.36
	>5000	53	40		
Training	Yes	16	20	1.19	0.18
	No	99	83		
Sex	Female	57	52	0.018	0.50
	Male	58	51		

4.5. Nurses Knowledge Toward Surgical Site Infection Prevention

This research result revealed that variable such as working period, marital status of the study subject and ethnicity has statistical association at p- value of less than 0.05 with nurse's knowledge on prevention of surgical site infection in Benishangul gumuz regional state hospitals and other variables were displayed here below in table 5.

Table 5. *Nurses knowledge toward surgical site infection prevention in Benishangul gumuz regional state hospital 2021.*

Variable	Category	Knowledgeable	Not knowledgeable	Prison chi-square	p-value
Working period	day	54	75		
	evening	32	13	11.98	0.003*
	night	19	25		
Work experience	<1 year	8	14		
	1-5 year	54	34	10.38	0.006*
	>5 year	43	65		
Equipment	Yes	58	47	0.22	0.36
	No	66	47		
Marital status	single	42	33		
	Married	57	78	6.06	0.048*
	Divorced	6	2		
Ethnicity	Amhara	27	45		
	Berta	6	6		
	Oromo	12	29	19.12	0.001*
	Other	60	33		
Level of qualification	Diploma	36	40		
	Degree	69	72	0.98	0.612
	Masters	0	1		
Guideline for SSI prevention	Yes	41	48	0.26	0.35
	No	64	65		

5. Discussion

The aim of the research was to identify nurses knowledge, practice and its associated factor toward prevention of surgical site infection. However the result of this study revealed 113 (51.8) of nurses were not knowledgeable toward prevention of surgical site infection. this finding was lower as compared with study which was conducted in University of Lahore, Pakistan shows that Majority nurses showed poor level of knowledge, tertiary and secondary health care settings of Maldives with poor knowledge was 60.2% and in Bangladesh with 70% not knowledgeable [5, 16, 17]. But to the contrary this result was higher as compared with research which is conducted in Sonia University, Lebanon results demonstrate poor knowledge of nurses on SSI was 29%, study in India revealed that nurses (29%) were not knowledgeable with means score of 2.61 similarly this finding was higher as compared with study done in Pakistan (6%) and Ethiopia revealed that about 7.6% of nurses who are working in Amhara regional hospital were not knowledgeable [4, 15, 18, 19]. This difference might be due variation of sample size, sociodemographic issues of the study participant, lack of guideline for surgical site infection prevention and the training quality which is given for all level nurses in each study sitting.

This research result is alarming for institutes and policy maker to made modification on the curriculum for nursing staff. In particular the Finding of this study demonstrated being not knowledgeable which suggests an urgent need of educational upgrading, on job training and awareness and create programs to improve nurse's knowledge regarding prevention of surgical site infection and to provide quality of care, it is very important for nurses to have good knowledge prevent the occurrence of surgical site infection for patient who undergo surgical treatment. About one hundred three participants with 47.2% of study participant were found to be with poor practice toward prevention of surgical site infection prevention. This result was in line with study which is done In Ethiopia which is 48.6% and study done In Rawalpindi, Pakistan (47%), [4, 19]. This similarity probably due to relatively comparable sample size and the presence of training curriculum for educating nurses during their time in college or advanced university.

The result of this study was lower as compared with study done in Mwakanyamale, Tanzania (57.7%) and Government hospitals of Palestine majority (91.1%) of the participant had poor practices towards infection prevention in the hospital [16, 21] but this finding was higher as compared with study done in Bangladesh (1.7%), in the Government hospitals of Palestine was ([9%]), [16, 20]. The difference was believed to be duet to variation in study sitting which means hospital structure, infection prevention principle in the hospital and on job training for nurses. This might lead to patient who undergo surgical treatment to have greater chance of getting SSI due to poor practice activities of the nursing staff.

According to this research result 5.5% of the study subject were often practicing sterility technique whereas around 11.9% were sometimes practicing sterility technique. this finding was lower as compared with Study done in north central Nigeria about 71.4% study subject were often using sterile technique to change dressing, although 28.6% respondent were sometime

using sterile technique during changing dressing practice (28%). This research shows that about 33 (15.1%) participants often using hand glove and face mask whereas 39 (17.9%) study subject were sometimes practicing hand glove and face mask usage during and after cleaning and dressing surgical wound this result was lower as Compared with Study done in north central Nigeria 22.3% and 27.3% reported using hand gloves and other protective devices often and sometimes respectively.

The result of this research finding about 38 (17.4%) respondents were often practicing hand washing before and after surgical wound care for patient who had surgical treatment. This finding was lower as compared with study result in north central Nigeria which is 34.9% were washing their hands before and after caring for a surgical wound often. One of the most important practice for prevention and cross contamination of infection was full usage of personal protective equipment like hand glove, face mask not to introduce microorganism to surgical wound during the time of wound care for the respective patient beside this nurse should have to practice hand washing. This difference might be variation in study sitting, training quality of nurses and variation in sociodemographic characteristic of study participant. This gap shows that training on how to practice technique of surgical site prevent in hospital is required.

6. Conclusion and Recommendations

This study was aimed to assess the nurse's knowledge, practice and associated factors toward prevention of surgical site infection in Benishangul gumuz regional hospital. The finding of this result shows that nurses were not knowledgeable. Similarly, the practice level of nurses toward surgical site infection was found to be poor. The chi-square result revealed the variables like working unit and marital status of study have association with not knowledgeable nurses where as variables like working period, marital status and work experience were showing association with poor practice toward prevention of surgical site infection. Feature research is recommended considering prospective follow up design.

Acronyms/Abbreviation

AUCRC=Assossa university community and research committee
DC=Data collectors
PI= principal investigators
SD=Standard deviation
SPSS=statistical product service solution
SSI=surgical site infection
WHO=world health organization

Ethical Consideration

Ethical clearance was obtained from ethical review committee of Assossa University college of Health science. After taking formal letter from AU then it will be submitted to Benishangul Gumuz Regional Health Bureau (BGRHB) and to Assossa Hospital, pawe hospital and, Bulen hospital to ensure compliance and to obtain their co-operation during data collection. After that participant was oriented about the purpose, procedure of data collection, confidentiality, privacy and the absence of any benefit was strictly maintained. participation was fully ensured on willingness with written and verbal consent and Cited references were presented for due acknowledgement of academic source.

Consent for Publication

No human specimen and no image have been included as part of our research work.

Data Availability (Where Applicable)

All the data is available and will be uploaded when required.

Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions

Made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas.

Have written, or substantially revised or critically reviewed the article.

Have agreed on the journal to which the article will be submitted.

Reviewed and agreed on all versions of the article before submission, during revision, the final version accepted for publication, and any significant changes introduced at the proofing stage.

Agree to take responsibility and be accountable for the contents of the article.

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