Knowledge, Risk Perception and Preventive Behaviors of OR Clinical Instructors and Nursing Students on COVID-19: Implications for Clinical Affiliation Plan

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Abstract – *The COVID-19 pandemic had a significant impact on the healthcare industry, including nursing education. Modified surgical guidelines set by WHO and COVID-19 risk, and prevention are all new to clinical instructors and nursing students. This study aimed to determine the knowledge, risk perception, and preventive behaviors of OR clinical instructors and junior nursing students of selected higher education institutions in Batangas Province. A descriptive cross-sectional online survey was conducted with a sample size of 132 respondents. The results showed that most of the respondents were knowledgeable about the etiology of COVID-19, its cause, and its potential to be fatal if left untreated. However, they needed reinforcement on knowledge about transmission, incubation, and treatment. The most common preventive measure was wearing a mask, but some respondents were still going to crowded places, wearing gloves, and using alternative measures against COVID-19. As future medical frontliners, the respondents need to understand the significance of vaccines, but some participants were at high risk because they did not want to be vaccinated. In addition, they thought that COVID-19 was not very dangerous and had no idea when it could be contained. Both the clinical instructors and nursing students did not know the surgical guidelines in the COVID-19 pandemic upon arrival of the patient in the OR and before anesthesia induction and before the patient leaves OR (sign-out). Female nursing students were more knowledgeable and practiced more preventive measures, such as wearing masks, wearing gloves, and not going out in crowded places. Male nursing students were knowledgeable about previous surgical guidelines before anesthesia induction, before skin incision, and before the patient leaves OR.*

The findings of this study have implications for clinical affiliation plans. Nursing schools need to ensure that their students are adequately prepared to provide safe and effective care to patients with COVID-19. This includes providing them with the knowledge, skills, and attitudes necessary to prevent the spread of infection and to provide care to patients who are infected.

Keywords – COVID-19 Pandemic; Preventive Behaviors; Risk Perception; Surgical Guidelines

INTRODUCTION

These are never known or experienced. No more nurses, shout by our medical institutions, they are tired and outnumbered by the patient. Where are the future nurses? Are they ready for this type of health problem? Temporary shutting down of educational institutions caused interruption of face-to-face schooling and shifted to the delivery of online and remote learning experience in courses that can be delivered online but not in skills that need to be learned and practiced in the actual setting. Traditionally the methodology in nursing education was learning the theories and principles through lectures in the classroom, then learning through practice in the skills laboratory, and then learning through actual patients during clinical affiliation. Even though the primary goal is to nurse for the sick and well communities, the occurrence of the COVID-19 pandemic has influenced nursing programs and needs deep and immediate solutions from nursing academics. Our student nurses are required to have a complete and excellent preparation in terms of knowledge, Attitude and more importantly the skills to face this global pandemic. Nursing education adapts on how to educate student nurses because of the extensive impact of COVID-19.

The hospitals both private and government, due to the COVID-19 pandemic, have abruptly transformed including Operating rooms and surgical guidelines to

cope with the new normal to accommodate the needs in continuing surgical procedures. According to an article released by San Juan and France-Presse [1] at Philippine Star Global with the association of the Department of Health (DOH), the DOH announced that a sum of 1,336 medical workers in the Philippines have tested positive for COVID-19. Moreover, worldwide, nearly 300,000 healthcare workers as of November 2020 have been infected by COVID-19 and is a threat to the healthcare system according to Haseltine [2].

Clinical nurses are supposed to have time for updated learning and education on specific risks in relevance to their area of practice (e.g., OR, hospital wards, ICUs, paediatrics, maternal-infant health, nursing homes, schools, etc.). This education should extend to nursing students, who might be brought during the pandemic to support their colleagues (Dewart et al., 2020) [3].

Student nurses in their hospital duties with COVID-19 patients are prone to acquire the infection. Numerous studies have already been done on the knowledge, preventive practices, and risk perception of nursing students about the coronavirus.

Modified surgical guidelines set by WHO and COVID-19 risk and prevention, are all new both to clinical instructors and nursing students, if limited face-to-face and clinical affiliation will be allowed, we need to know if they are prepared or if we need to make a plan for how the clinical instructor will facilitate the learning, how the student will learn and how to ensure the safety of clinical instructor and the students as well.

OBJECTIVE OF THE STUDY

This study determined the Knowledge of Surgical Guidelines Risk Perception and Preventive Behaviors during the COVID-19 Pandemic Among OR Clinical Instructors and Junior Nursing Students of Selected Higher Education Institutions in Batangas Province. Specifically, it sought to determine the demographic characteristics of the respondents in terms of age, gender, level of education and school; to determine the level of knowledge in surgical guidelines during pandemic among OR Clinical Instructor and Junior & Senior Nursing Students; determine the level of knowledge, risk perception and preventive behaviors in Covid-19 among OR Clinical Instructor and Junior & senior Nursing Students; to determine the difference between the profile and the level of knowledge in surgical guidelines during pandemic and level of knowledge, risk perception and preventive behaviors in Covid-19 among OR Clinical Instructor and Junior & senior Nursing Students; to find out the significant relationship between demographic profile and knowledge in surgical guidelines and knowledge, risk perception and preventive behavior in COVID-19 pandemic among OR Clinical Instructor and Junior Nursing Students and to suggest a strategy that could be used to get ready for clinical affiliation.

MATERIALS AND METHODS

Research design

This study utilized a descriptive cross-sectional online survey in gathering data and searching knowledge on surgical guidelines and COVID-19, risk perceptions, and preventive behavior of clinical instructors and junior & senior nursing students as respondents from (6) six selected higher education offering Bachelor of Science in Nursing in Batangas Province namely: Lyceum of the Philippines University-Batangas (LPU-B); Lyceum of the Philippines University-Laguna; First Asia Institute and Technology and Humanities (FAITH), Batangas State University (BSU); University of Batangas (UB); Golden Gate Colleges (GGC).

Respondents of the Study

The sample size was calculated using the Raosoft sample size calculator (Sample Size Calculator by Raosoft Inc. nd). There are 132 respondents out of 153 required sample size with a 95% confidence level and 5% margin of error, 50% response distribution. The researcher utilized stratified random sampling, dividing the population into two groups, the nursing students and the clinical instructors. Participants were limited to nursing students in their third or fourth year of the program who were engaged in clinical practice and clinical instructors, who previously handled clinical affiliation of students in OR before the pandemic, were not more than 60 years old and had no current health problems. They are all doing their clinical affiliation in the Batangas Province even though their residence is not.

Data Instrument

Data were gathered using a Self-made questionnaire to determine the respondent's knowledge of surgical guidelines during the pandemic and a standard questionnaire by MERS with slight modifications in a survey form between May to June 2021. It is divided into four sections: demographics, -related knowledge, preventive behaviors, and risk perception of COVID-19.

The first section of the questionnaire contained items surveying demographic information, including gender, age, religion, COVID-19 education, and type of COVID-19 education.

Knowledge of COVID-19

A prior study on MERS served as the basis for the 29-item knowledge level assessment. There were three questions on the genesis and fundamental science of COVID-19. In this section, there were eight questions about the disease's transmission, eight questions about the symptoms and incubation time, four questions about treatment, and six questions about community prevention. Every question has a "True" response. The participant received one point for a correct response, while receiving zero points for a wrong response. The right responses were added together to determine the final score. A percentile was created from the total score. It was deemed to have a high level of knowledge if the result was more than or equal to 75%, a medium level of knowledge if it was between 50% and 75%, and a low level of knowledge if it was less than or equal to 50%.

Preventive behaviors

In earlier studies, the scale for rating preventative behaviors was developed. Responses were evaluated using a five-item scale that had three questions regarding taking preventive action in daily activities, one question about limiting daily usage of public spaces, and one question concerning traditional therapeutic approaches to prevention.

The options were "yes" or "no," and each constructive action earned the participants one point (wearing masks, using gloves, avoiding crowded environments, and using protective equipment in the workplace). The overall score was calculated by adding all of the "Yes" responses. In terms of preventive behaviors, scores of seventy-five percent (75%) or greater were considered strong performance, while scores of less than 75% were considered low performance.

Risk perception

Risk assessment's ultimate goal is to use public health measures devoid of medication to control an outbreak, facilitate emergency responses, and decrease the harm. This is crucial for COVID-19 since the virus is easily mutable and there is now no cure for it. Risk analysis begins with the event's detection and continues until it is in control. To understand the participants' risk assessment levels, four questions were created. The questionnaires asked respondents whether they would receive the COVID-19 vaccination, how serious they perceived the disease to be, whether they felt it would be contained, and finally, how long they expected it would take.

Data Gathering Procedure

Random Sampling for the required sample size (153) was utilized by the researcher in this study. The self-made questionnaire about knowledge of surgical guidelines during the pandemic was distributed to participants online using a google survey. It is taken from the recommended OR guidelines during the Pandemic that the Department of Health issues. The study's goal was explained to the participants. They were given the option of whether to participate or not. They were informed that the information obtained from them will only be used for the SY: 2021-2022. They were instructed that they can answer it during their free time and the researcher explains the procedure of how they will answer the toll and can contact them thru their email or cell phone number is given to them privately. The researcher ensured that no personal information or individuals will be harmed throughout the process and no reward or payment was given to them since the involvement in the study is voluntary. Only those who completed the survey were included. In return, the participants may also ask the researcher about the results obtained since they're the beneficiary of the study. The results were precisely encoded, summarized, and will be analyzed.

Data Analysis

Spss/Win version 21.0 was used to evaluate the collected data (IBM, Armonk, NY, USA). The Kolmogorov-Smirnov test was used to confirm that the primary variables (knowledge of surgical guidelines, knowledge of COVID, preventative actions, and risk perception) had a normal distribution. Frequencies, percentages, means, and standard deviations were used to examine the individuals' general characteristics as well as their knowledge of COVID-19, preventative practices, and risk perception. An independent t-test was used to examine differences between the primary variables according to general characteristics, and an independent Pearson's correlation test was used to quantify the correlations between the variables.

Ethical Consideration

The ethics review committee of Lyceum of the Philippines University Batangas received the study submission and approved it. Anonymity and confidentiality for the respondents were guaranteed. The completion of the survey and its submission constituted consent to take part in the study. For this investigation, fundamental ethical considerations were taken into account. The respondent's right to protection from exploitation and freedom from harm was taken into consideration. The right to self-determination was considered which includes the respondent's right to raise their queries, right to refuse, and right to provide information or withdraw participation from this study. The right to full disclosure was included. With this, the researcher fully discussed the nature of the study, the respondent's right to disapprove of participation, and the risks and benefits. Fairness and equity were manifested. Lastly, the right to privacy was exercised. Confidentiality and the respondents' anonymity were secured throughout the study.

RESULTS AND DISCUSSION

Table 1
Distribution of Respondents' Profile

Profile Variables	Frequency	Percentage
Age		
20 years old and below	80	60.6
21 - 30 years old	43	32.6
31 - 40 years old	3	2.3
41 years old and above	6	4.5
Sex		
Male	19	14.4
Female	113	85.6
Level of Education		
Clinical Instructor	8	6.1
Student	124	93.9
School		
Batangas State University	10	7.6
Dela Salle Lipa	25	18.9
First Asia Institute and Technology and Humanities	18	13.6
Golden Gate Colleges	1	0.8
LPU-St. Cabrini School of Health Science, Inc.	10	7.6
Lyceum of the Philippines University-Batangas	68	51.5

The distribution of respondents' profiles is shown in Table 1. The survey included 132 respondents in total. 19 participants (14.4% were men) and 113 participants (85.6%) were female. It comprises 124 (93.9%) junior nursing students and 8 (6.1%) Clinical Instructors handling students in the Operating Room. 68 (51.5%) junior nursing student participants were from Lyceum of the Philippines University-Batangas where the author of the study is working/teaching. This group of nursing students is scheduled to do their first OR clinical affiliation, and they don't have any actual skills laboratory and hospital experience due to the pandemic. As Mandated by CHED, on its Memorandum Order (CMO) No. 15 S, Graduates of the Bachelor of Science in Nursing degree should be proficient in all major areas of responsibility, including Safe and Quality Nursing Care, and should be able to apply analytical and critical thinking to nursing practice.

Table 2
Knowledge of COVID-19

Questions	Frequency*	Percentage
Have you heard of COVID-19?	132	100.0
Does COVID-19 occur as a virus	132	100.0
Is covid-19 transmitted by respiratory droplets?	131	99.2
Can covid-19 be transmitted while talking?	130	98.5
Can covid-19 be transmitted by shaking hands?	127	96.2
Can covid-19 be transmitted from animals to humans?	45	34.1
Can diarrhea also appear in covid – 19 cases	117	88.6
Can covid-19 lead to death?	131	99.2
The incubation period for the virus is 4-6 days.	60	45.5
Can covid-19 patients recover completely?	122	92.4
Can a covid-19 patient have no complaints or symptoms?	111	84.1
Does the covid-19 contamination risk increase in crowded places?	130	98.5
Can COVID-19 live on surfaces, such as door handles and tables, for a long time?	119	90.2
Does hand washing protect against the virus?	132	100.0
Does using a mask protect against the virus?	130	98.5
The main symptoms of COVID-19 are a fever, a cough, shortness of breath, weakness, and muscle pain.	131	99.2
A runny nose, nasal congestion, and sneezing are less frequent in COVID-19 infections.	104	78.8
Currently, there is no effective treatment for COVID-19.	96	72.7
Can a large proportion of covid-19 infections be resolved without hospitalization?	104	78.8
COVID-19 is transmitted from the infected patient via the respiratory tract.	130	98.5
The purpose of the mask worn by the non-hospital worker is to prevent them from getting infected with COVID-19.	128	97.0
To avoid covid-19, crowded areas and public transportation should not be used.	119	90.2
Isolating patients with covid-19 is effective in preventing the spread of the virus.	130	98.5
The observation period of a patient with COVID-19 is 14 days.	130	98.5
Older adults with chronic lung disease and obese people can have a more serious case of the disease.	131	99.2
Other people will not be infected if a covid-19 infected person does not have a fever.	77	58.3
Young people and children do not need to take precautions to prevent infection.	69	52.3
A COVID-19 vaccine exists.	130	98.5

*Number of correct answers (=/> 75% high; 50% to 75% moderate; <75% low level of knowledge)

Table 2 describes the knowledge of the respondents. All responders were aware of Covid-19's existence, the fact that a virus is responsible for it, and

the fact that it can be fatal. They believe that Covid-19 is transmitted by respiratory droplets; from the infected patient via the respiratory tract; while talking; by shaking hands and the risk increases in crowded places,

Also Covid-19 virus live on surfaces, such as door handles and tables, for a long time; (99.2%; 98.5%; 96.2% and 90.2% respectively) but 34.1% believe it can (Covid-19) be transmitted from animals to humans and other people will not be infected if a Covid-19 infected person does not have a fever (58.3%). With regards to incubation and symptoms, 45.5% know the incubation period for the virus is 4-6 days. For them, (99.2%) it's true, that the main symptoms of Covid-19 are a fever, a cough, shortness of breath, weakness, and muscle pain.

A runny nose, nasal congestion, and sneezing are less frequent in Covid-19 infections (78.8%). 88.6% of the participants claim that diarrhea can also appear in covid – 19 cases. But 84.1% believe that covid-19 patient has no complaints or symptoms. In managing patients with Covid-19, the observation period of the patient with Covid-19 is 14 days which is agreed by 98.5% of respondents and a large proportion of covid-19 infections can be resolved without hospitalization (78.8%) and recover completely (92.4) %; Currently, there is no effective treatment for Covid-19 (72.7%). Does hand washing protect against the virus (100%); Does using a mask protect against the virus (98.5)%; A Covid-19 vaccine exists (98.5%); Older adults with chronic lung disease and obese people can have a more serious case of the disease (99.2%); The purpose of the mask worn by the non-hospital worker is to prevent them from getting infected with Covid-19 (97%); To avoid covid-19, crowded areas and public transportation should not be used (90.2%). Details about Covid-19 were spread globally and people are overwhelmed by the news that they are seeing on different media platforms. How government implements its policies and laws about educating and preventing the of spreading the disease.

Some of them know that it is caused by a virus thru droplets, but others were confused because others say it is airborne, and due to its impact, some of the important details tend to overlook. In an effort to keep the public informed about new information and public health recommendations, organizations like the WHO, international public health networks, and government public health agencies have employed a variety of media outlets, including print, radio, and television (Leigh et al., 2020) [4]. The study by Yildirim & Guler, (2020) [5] the majority of participants were highly involved in preventative practices and had limited understanding about Covid-19 and were highly engaged in preventive behaviors, added to that Mirza et al. (2020) [6], people thought that the use of face masks, washing hands, and touching the face with unwashed hands, and avoiding close contact with sick people should be used as a preventive measure.

In terms of knowledge level, almost all participants were aware of the common symptoms of the disease. However, certain myths have been reported such as antimalarial drugs and kalonji may be effective in the prevention or treatment of the disease, rinsing the mouth, skin rash, and watery diarrhea.

Table 3

Preventive Behaviors for COVID-19

Questions	Frequency*	Percentage
Do you wear gloves?	85	64.4
Do you wear a mask when leaving the house?	132	100.0
Are you still going to crowded places?	41	31.1
Do you use alternative methods against COVID-19?	97	73.5

• 75% high performance; < 75% low performance

Table 3 shows the preventive behaviors of the respondents for Covid-19. All respondents are highly performing in wearing a mask when leaving the house but performed low in terms of using alternative methods against COVID-19; wearing gloves; going to crowded places (73.5%; 64.4% and 31.1% respectively).

Some governments including the Philippines implemented drastic measures to slow down the spread such as posing lockdowns, severe travel restrictions, curfews, the closing of borders, and the limitation of personal contact with relatives. Every nation must act quickly to stop the spread of Covid-19 and keep its healthcare system from becoming overburdened with critically ill patients (Cvetkovic et al., 2020) [7].

As of right now, the majority of people on earth are aware of the coronavirus and the necessity to practice good hygiene, including hand washing and social seclusion, to prevent transmission. While most people adhere to the regulations to the letter, some choose to delay or disobey them and mix with large crowds in public areas, tourist destinations, or their residences. This suggests that since it might affect the new number of new positive cases, risk perception may be a significant moderator of the epidemic's growth.

Table 4
Risk Perception of COVID 19

Questions	Frequency	Percentage
1. Would you like to get a covid-19 vaccine?		
Yes	125	94.7
No	1	0.8
I Don't Know	6	4.5
2. How do you judge the severity of COVID-19?		
Very dangerous	117	88.6
Moderately dangerous	15	11.4
3. Do you believe COVID-19 will eventually be contained?		
Yes	88	66.7
No	4	3
I don't know	40	30.3
4. How long will it take before COVID-19 is contained?		
1-3 months	9	6.8
3-6 months	10	7.6
6-12 months	16	12.1
I don't know	97	73.5

Yes/Positive response = low-risk perception; No; I don't know/ negative response = high-risk perception

Table 4 shows the respondent's risk perception of COVID -19. 94.7% of them agreed (low-risk perception) to receive the covid vaccine and 4.5% were not sure and .8% don't want to receive the covid vaccine belongs to the high-risk perception. When asked about the severity of COVID-19, 88.6% say it's very dangerous they are in the low-risk group and 11.4% answered moderately dangerous and at high risk. 66.7% of the respondents believe COVID-19 will eventually be contained; 30.3% have no idea and 3% don't believe that covid-19 can be contained, although 73.5% don't know how long, 12.1% say 6-12 months; 7.6% says 3-6 months and 6.8% of respondents told 1-3 months it takes to manage the covid-19. Even though they are all nursing students and clinical instructors, they are the ones who can easily understand the significance of vaccines and the science behind the diseases they're still differences that can influence their judgment and practices like experiences, family beliefs, existing health problems, and others.

According to Hye and Hove (2017) [8], Risk perceptions refer to people's assessment and judgment of dangers to which they are or may be exposed, with a variety of unfavorable impacts that people identify with particular sources. Risk behaviors are significantly influenced by risk perception. Risk perception and risk assessment are influenced by a wide range of elements, including societal, individual, cultural, and various social and contextual factors.

Decisions and practices affect people's behaviors and of course, people's health conditions. Those who are more protective keep themselves updated about recent practices that are based on facts and research and have been approved by the authorities. Ventsislavova et al. (2021) [9] found that those who perceive risk as low are more likely to engage in risky conduct or cut back on preventative measures, whereas those who perceive risk as high are more likely to engage in preventive measures. The H1N1 swine flu pandemic of 2009, the Ebola outbreak, the Avian influenza (bird flu), and the SARS pandemic provide some of the most prominent findings on risk perception (Dryhurst et al., 2020) [10]. Even if risk perception serves as a catalyst for preventive action, the adoption of preventive health behaviors is also influenced by a person's views about health and particular health cognitions.

Table 5
Knowledge of Surgical Guidelines during the Pandemic in terms of Upon arrival of the patient in the OR theater, before anesthesia induction

Questions	Frequency*	Percentage
Verify patient identity	132	100.0
Verify Covid status (If another test is used, need to indicate the test and date	110	83.3
Verify COVID vaccination status	97	73.5
Provide a new surgical mask to the patient if not intubated	103	78.0
Verify planned procedure	132	100.0
Verify site/side/level	131	99.2
Check signed consent	132	100.0
Confirm imaging data	130	98.5
Check for allergy	130	98.5
Check for airway or aspiration risk	132	100.0
Check if the correct implants, prostheses, and equipment available	130	98.5
Check if AGP precaution is in place	96	72.7
Check IV access	130	98.5
Check if the PPEs of OR staff are appropriate and intact	92	69.7
Check if team members are away from the patient during intubation/other AGPs	91	68.9

Number of correct answers *(=/> 75% high; 50% to 75% moderate; <75% low level of knowledge)*

Table 6 shows knowledge of surgical guidelines during the pandemic in terms of upon arrival of the patient in the OR theater, before anesthesia induction. Among the criteria that support the high level of knowledge are as follows, verify patient identity and planned procedure; Check signed consent and airway or aspiration risk (all 100%). Other criteria such as verifying site/side/level got 99.2%; confirming imaging data; checking for allergy; correct implants, prosthesis, and equipment available; and IV access all had 98.5%. Verify Covid status, if other tests are used, need to indicate the test and date 83.3%; provide a new surgical mask to the patient if not intubated 78%. The rest of the criteria such as verify Covid-19 vaccination status; if AGP precaution is in place; if PPEs of OR staff are appropriate and intact and if team members are away from the patient during intubation/other AGPs (73.5%; 72.7%; 69.7%; 68.9%) respectively indicate a moderate level of knowledge.

Table 7
Knowledge of Surgical Guidelines during the Pandemic in terms of Before the Patient Leaves OR (sign out)

Questions	Frequency*	Percentage
Verbally confirm instrument, sponge, and needle counts complete, aseptic technique observe and maintained throughout	132	100.0
The surgeon/staff must be out before extubation (minimal number of surgical staff left inside.	107	81.1
If not possible to leave the room, maintain a maximum distance of surgeons, and nurses from the patient during intubation	113	85.6
Verbally confirm surgical procedure done	132	100.0
Specimens identify and label properly and double–bagged	132	100.0
Check for any equipment malfunction and issues that need to be addressed before the next case	132	100.0
Verify post-op care endorsement	132	100.0
Check if all members of the OR have intact PPEs	88	66.7
Provision of a new surgical mask to the patient if not intubated	89	67.4
Check if the transport team in appropriate and intact PPEs	91	68.9

*Number of correct answers (=/> 75% high; 50% to 75% moderate; <75% low level of knowledge)

Table 7 shows the knowledge of surgical guidelines during the pandemic in terms of before the patient leaves OR (sign out). All respondents had a high level of knowledge in the following criterion: verbally confirm, instrument, sponge, needle counts complete, aseptic technique observe and maintained throughout; check for any equipment malfunction and issues that need to be addressed before the next case; verbally confirm surgical procedure done; specimen identify and label properly and double – bagged and verify post-op care endorsement, other criteria such as if not possible to leave the room, maintain a maximum distance of surgeons, nurses from the patient during intubation 85.6% and surgeon/staff must be out before extubation (minimal number of surgical staff left inside). While other criteria such as: Check if the transport team in appropriate and intact PPEs; provision a new surgical mask to the patient if not intubated; checking if all members of the OR have intact PPEs (68.9%, 67.4%, and 66.7%) respectively had a moderate level of knowledge.

Table 8 describes the difference in responses on knowledge and preventive behaviors for COVID-19 when grouped according to profile. As reflected in the table, there was a statistically significant difference in knowledge of COVID-19 (p=0.037) when grouped according to age. The post hoc test revealed that the 21 – 30 years old group had significantly higher scores in knowledge compared to the 31 – 40 years old group. Likewise, there was a statistically significant difference in preventive behaviors for COVID-19 (p=0.013) when the respondents were classified as to sex. This finding suggests that the responses of males and females vary significantly where female respondents had a significantly higher score in preventive behaviors compared to male respondents.

Table 8
Difference of Responses on Knowledge and Preventive Behaviors for COVID-19 When Grouped According to Profile

Variables	λ^2 c / U	p-value	Interpretation
Knowledge			
Age	8.506	0.037	Significant
Sex	988.000	0.569	Not Significant
Level of Education	450.500	0.656	Not Significant
School	8.730	0.120	Not Significant
Preventive Behaviors			
Age	5.340	0.149	Not Significant
Sex	709.500	0.013	Significant
Level of Education	469.500	0.789	Not Significant
School	4.760	0.446	Not Significant

Legend: Significant at p-value<0.05

Table 9
Difference of Responses on Knowledge in Surgical Guidelines When Grouped According to Profile

Variables	λ^2 c / U	p-value	Interpretation
Before Anesthesia Induction			
Age	10.912	0.012	Significant
Sex	721.000	0.007	Significant
Level of Education	467.000	0.746	Not Significant
School	4.116	0.533	Not Significant
Before Skin Incision (Time-out)			
Age	5.985	0.112	Not Significant
Sex	806.000	0.024	Significant
Level of Education	486.000	0.901	Not Significant
School	4.491	0.481	Not Significant
Before Patient Leaves OR (sign out)			
Age	9.135	0.028	Significant
Sex	608.000	0.000	Highly Significant
Level of Education	425.500	0.435	Not Significant
School	5.804	0.326	Not Significant

Legend: Significant at p-value<0.05

Table 9 shows the difference in responses on knowledge in surgical guidelines when groups according to profile. As seen in the table, there was a statistically significant difference before anesthesia induction (p=0.012), and before the patient leaves OR (p=0.028) when grouped according to age. Post hoc tests showed that the 21 – 30 years old group had significantly higher scores before anesthesia induction and before the patient leaves compared to 20 years old and below the group.

Likewise, there was a statistically significant difference before anesthesia induction (p=0.012), before skin incision (p=0.024), and before the patient leaves OR (p=0.000) when the respondents were classified as sex. This finding suggests that the responses of males and females differ significantly

where male respondents had significantly higher scores in the knowledge of surgical guidelines compared to female respondents.

As" seen in the table, the knowledge of COVID-19 was not found significant with the independent variables such as age, sex, level of education, and school (R2 = 0.055, F= 1.840, p=0.125). However, as a result of multiple linear regression analysis, it was found that the explanatory factor for knowledge was a school(p=0.016). When other variables are kept constant, the school increases the knowledge scores by 0.204 points.

In terms of preventive behaviors, the multiple linear regression model was found to be significant, in which the independent variables were age, sex, level of education, and school (R2 = 0.099. F=3.504, p=0.009). As a result of multiple regression linear regression analysis, it was found that the explanatory factors of preventive behaviors were age(p=0.006) and level of education(p=0.049). When other variables are kept constant, age decreases the preventive behaviors scores by 0.379 points while the level of education decreases the preventive behaviors scores by 0.825 points.

Table 10
Multiple regression analysis results of independent variables for knowledge and preventive behaviors for COVID-19

Independent Variables	Estimate (β)	Std.Error	t	p-value
Knowledge				
(Constant)	23.505	2.288	10.275	0.000
Age	0.117	0.285	0.412	0.681
Sex	-0.028	0.445	-0.062	0.950
Level of Education	-0.034	0.876	-0.039	0.969
School	0.204	0.083	2.452	**0.016**
Preventive Behaviors				
(Constant)	3.962	1.084	3.654	0.000
Age	-0.379	0.135	-2.807	**0.006**
Sex	0.381	0.211	1.805	0.073
Level of Education	-0.825	0.415	-1.987	**0.049**
School	0.044	0.039	1.116	0.266

As reflected in the table, the knowledge of surgical guidelines before anesthesia induction was found to be significant with the independent variables such as age, sex, level of education, and school (R2 =0.129, F=4.708, p=0.001).

As a result of multiple linear regression analysis, it was found that the explanatory factors for knowledge in surgical guidelines before anesthesia induction were age (p=0.008), sex (p=0.017), and level of education(p=0.023). When the other variables are kept constant, age increases the scores of pieces of knowledge in surgical guidelines before anesthesia by 0.972 points while the level of education increases by 2.540 points. However, sex decreases the scores by 0.225 points.

Table 11
Multiple regression analysis results of independent variables for knowledge in surgical guidelines

Independent Variables	Estimate (β)	Std.Error	t	p-value
Before anesthesia induction				
(Constant)	9.066	2.889	3.138	0.002
Age	0.972	0.360	2.701	**0.008**
Sex	-1.366	0.562	-2.429	**0.017**
Level of Education	2.540	1.107	2.295	**0.023**
School	0.108	0.105	1.028	0.306
Before Skin Incision (Time-out)				
(Constant)	6.163	0.656	9.389	0.000
Age	0.180	0.082	2.198	**0.030**
Sex	-0.225	0.128	-1.760	0.081
Level of Education	0.342	0.251	1.360	0.176
School	0.007	0.024	0.304	0.761
Before the Patient Leaves OR (sign out)				
(Constant)	6.142	2.326	2.641	0.009
Age	0.695	0.290	2.400	**0.018**
Sex	-1.325	0.453	-2.927	**0.004**
Level of Education	1.956	0.891	2.195	**0.030**
School	0.040	0.085	0.469	0.640

As reflected in the table, the knowledge of surgical guidelines before anesthesia induction was found to be significant with the independent variables such as age, sex, level of education, and school (R2 =0.129, F=4.708, p=0.001). As a result of multiple linear regression analysis, it was found that the explanatory factors for knowledge in surgical guidelines before anesthesia induction were age (p=0.008), sex (p=0.017), and level of education(p=0.023). When the other variables are kept constant, age increases the scores of pieces of knowledge in surgical guidelines before anesthesia by 0.972 points while the level of education increases by 2.540 points. However, sex decreases the scores by 0.225 points.

In terms of the knowledge of surgical guidelines before skin, the incision was found to be significant with the independent variables such as age, sex, level of education, and school (R2 = 0.075, F=2.571, p=0.041). As a result of multiple linear regression analysis, it was found that the explanatory factor for knowledge of surgical guidelines before skin incision was age. When the other variables are kept const, age increases the scores of bits of knowledge in surgical guidelines before skin incision by 0.180 points.

Knowledge of surgical guidelines before the patient leaves OR was found to be significant with the independent variables such as age, sex, level of education, and school (R2 =0.130, F=4.731, p=0.001). As a result of multiple linear regression analysis, it was found that explanatory factors for knowledge in surgical guidelines before patient leaves OR were age (p=0.018), sex(p=0.004), and level of education(p=0.030). When the other variables are kept constant, the age increases the scores of knowledge in surgical guidelines before the patient leaves OR by 0.695 points while the level of education increases by

1.956 points. However, sex decreases the scores by 1.325 points.

ACTION PLAN IN THE PREPARATION FOR CLINICAL AFFILIATION.

In order to improve their understanding of surgical guidelines, risk perception, and preventative behaviors in the Covid-19 epidemic and prepare them for clinical affiliation, an Action Plan was created based on the findings of the research.

This action plan is presented in a tabulated form composed of an area of concern, objectives, activities/methodologies, the person responsible, and success indicators.

Area of Concern	Objectives	Activities / Methodologies	Persons Responsible	Success Indicator
Clinical Instructor Orientation/ Training	Clinical instructors will be able to enhance their knowledge of surgical guidelines, risk perception, and preventive behaviors in the Covid-19 pandemic leading to preparedness for clinical affiliation.	Hospital orientation (OR and Covid-19) Familiarization with surgical guidelines in the Covid-19 pandemic. Provision of resources (PPEs, etc.) Inclusion of new surgical guidelines in course syllabi/ clinical focus. Revision of OR checklist Conduct of OR simulation.	Affiliating Hospitals Deans/Heads of Department	All Clinical Instructors updated their knowledge and Skills on surgical guidelines during the Covid-19 pandemic.
Nursing Students OR Orientation	Nursing students will be able to enhance their knowledge of surgical guidelines, risk perception, and preventive behaviors in the Covid-19 pandemic leading to preparedness for clinical affiliation.	Hospital orientation (OR and Covid-19) Familiarization with surgical guidelines in the Covid-19 pandemic. Simulation of new surgical guidelines in Covid-19 utilizing nursing simulation lab	Affiliating Hospitals Nursing Simulation Lab Deans/Heads of Department OR Clinical Instructors	All Nursing students updated their knowledge and Skills on surgical guidelines during the Covid-19 pandemic.
Vaccination	Explain the importance of vaccination and dispel any myths or misconceptions about vaccines. Make it easy for students to get vaccinated by providing them with information about where and how to get vaccinated.	Make it easy for students to get vaccinated by providing them with information about where and how to get vaccinated.	Affiliating Hospitals Deans/Heads of Department	All Nursing students and clinical instructors will be fully vaccinated

CONCLUSION AND RECOMMENDATION

Knowledge of surgical guidelines during the COVID-19 pandemic: The surgical protocols for the COVID-19 pandemic were not known by clinical instructors or nursing students when the patient entered the operating room, before the induction of anesthesia, or while the patient was leaving the operating room (signing out). Risk perception: Some participants continue to frequent crowded areas despite having a low risk perception of COVID-19 and not believing in the value of vaccination. Preventive behaviors: The majority of responders wear masks to protect themselves from COVID-19, however some do not follow other preventive behaviors including avoiding crowded areas and being immunized.

To utilize the proposed plan of action which enhances the Knowledge of Surgical Guidelines, Risk Perception, and Preventive Behaviors during the COVID-19 Pandemic Among OR Clinical Instructor and Junior Nursing Students of Selected Higher Education Institutions in Batangas Province. To make the Clinical Instructor and Nursing students of the immediate OR surgical guidelines in Covid-19 awareness and be better in dealing with the psychophysiological preparation in the clinical affiliation, revision in syllabi/clinical focus/checklist and reorientation should be carried out. The OR Clinical Instructor of every institution may send for training and certification. Finally, institutional management must include psychological health issues in the planning process. There is a need to incorporate financial and health support on the part of clinical instructors since they will be thinking about the high risk of exposure to the Covid-19 virus. The present study may be replicated by focusing on another hospital area.

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