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Knowledge, Attitude, and Practices on Infection Control Among Nursing Students in Biliran Province State University

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ABSTRACT

Background: Nursing students in the Philippines have to undergo clinical rotation not only in Hospital wards but also at other hospital departments such as (DR) Delivery Room and OR Operating Rooms. These areas that they need to be skillful with as it is part of their requirements before graduation thus giving them a chance for eligibility to take Philippine Nursing Licensure Examination. Good role modeling and clinical supervision are a key part of developing the strong commitment to strict adherence to Infection prevention and control protocols for nursing students. Hence, this study aimed to determine the knowledge, attitudes and practices regarding infection control among student nurses in Biliran Province State University.

Methods: A descriptive correlational research design was used to conduct this study, as survey questionnaires were administered for the data collection from 255 BSN students in Biliran Province State University. Participants ranged from second-year to fourth-year students. Most of them were 19-21 years old, female and single Roman Catholic.

Results: The findings were therefore able to identify a regard of knowledge as well as attitudinal towards infection control among the respondent. Over time majority of the students followed standard precaution measures most of the time. Interestingly, none of the six socio-demographic factors were found to have any relationship with the respondents' level of knowledge, attitudes, and practices. Moreover, no correlation was evident which suggests that these variables are separate from each other between Knowledge, Attitude, and Practice.

Conclusions: The research presented herein highlights the need for further advances made in the tweaking of the education interventions in matters concerning support and reinforcement of IPC measures despite boasting a healthcare safety environment.

Keywords: nosocomial infections, Infection Control, needle prick injury, Standard Precautions, Student Nurses, clinical rotation , Surgical Gloves, personal protective equipment

INTRODUCTION

Nursing students are required to perform their professional ethics, knowledge, and skills throughout their clinical rotations in a variety of areas, including decision-making, interpersonal connections,

communication, leadership, management, and innovation. Nursing students in the Philippines are exposed to different areas especially in the Delivery Room and Operating Room in the hospital as one of the requirements for them to graduate and file for application for the Philippine Nursing Licensure Examination. To ensure that all healthcare students prioritize rigid compliance to infection prevention and control protocols, strong clinical supervision and role modeling are crucial.

Meanwhile, nosocomial infections cause major health problems including longer hospital stays and higher mortality among affected patients, especially in developing countries. A nosocomial infection is an infection you get while you are in the hospital for another reason. It is also called a hospital-acquired infection or a healthcare-associated infection. The rate of nosocomial infection is about 5% to 10% in industrialized countries and about 20% to 25% in developing countries (Pezhman et al ., 2021).

According to the World Health Organization (WHO), the highest rate of nosocomial infections is reported from the Eastern Mediterranean and Southeast Asia, and the lowest rate is reported from the Western Pacific, Ocean, and Europe. It is also reported that about 7% of hospitalized patients in developed and 10% of them in developing countries acquire NI. As of June 30, 2020, in the Philippines, on a surgical ward, approximately one-third of admitted patients do not undergo any surgical operations, and some patients have an infection- and hospital-provider-related events. Many of these complications are related to general ward management.

Furthermore, there were 182 patients (122 males and 62 females; mean age 34.89 ± 20.56 years) included in this report, seventeen patients (9.34%) developed HAI during admission (Rovillos & Arancel, 2020). Transmission of MRSA in the healthcare environment is usually by contact between patients through the hands, clothes, or equipment of HCWs. In the Philippines, most studies have focused on the epidemiology of MRSA from patient samples with rates being reported as 45.8% and 30.1%. (Alcazaren et al., 2020).

In addition, improper disposal of sharps and needles may also introduce pathogens through a cut or a stick that instigates bacteremia, quickly spreading through the bloodstream and causing inflammation and infected organs (Chamberlain, 2019). However, the improper waste management rules adopted in healthcare hospitals around the world cause a potential health impact on the ecosystem which generates contagious and deadly diseases affected by human beings (Christyraj et al., 2021). Many countries are demonstrating strong engagement and progress in scaling-up actions to put in place minimum requirements and core components of IPC programs.

However, no research has been conducted yet to determine the knowledge, attitude, and practices on infection control among nursing students in Biliran Province State University. As a result, the researchers conducted the study. The study was conducted using a descriptive-correlation research design among nursing students at Biliran Province State University. The aim and specific objectives of the study focus on the interrelations between socio-demographic factors and infection control knowledge, attitudes, and practices among nursing students.

METHODS

Study Design, Setting, and Respondents

This study utilized a descriptive correlational design. The goal of this study was to determine if the knowledge, attitude, and practices on infection control among nursing students are properly executed and determine if there is an impact on the safety and well-being of the patients.

Meanwhile, the study was conducted at Biliran Province State University. This study exclusively centers on the student nurses from the Biliran Provincial Hospital, the only hospital in the Province of Biliran,

Region VIII. The study utilized purposive sampling with the following inclusion criteria (1) He/she is currently enrolled in the School of Nursing and Health Sciences in Biliran Province State University S.Y. 2022-2023 (2) He/she must be a 2nd year, 3rd year, or 4th year student (3) He/she has been exposed in clinical setting.

Data Collection Instruments

The researchers used standardized questionnaires based on the article "Knowledge, Attitude, and Practice of Standard Infection Control Precautions among Health-Care Workers in a University Hospital in Qassim, Saudi Arabia: A Cross-Sectional Survey" (Abalkhail et. Al, 2021) that is formulated from the guidelines of CDC and WHO. The questionnaires were divided into four parts. The first part contained questions about the respondents' sociodemographic profile that included age, sex, civil status, religion, and year level, a total of 5 items. The second, third, and fourth parts focused on the knowledge, attitude, and practices of infection control.

Level of knowledge was assessed using a 20-item scale, that was answered by yes or no. Points for each question were provided, 1 point for each right answer and 0 points for each wrong answer. The maximum possible score was 20 points with a range from 0 to 20 points.

Attitude on infection control was assessed using a 14-item scale. Each statement was assessed using a 4-point Likert-type scale (strongly disagree to strongly agree), 5 points for each right answer and 0 points for each wrong answer. The maximum possible score was 56 points with a range from 14-56 points.

Practices on infection control were assessed using a 15-item scale. Each statement was assessed using a 4-point Likert scale (always, sometimes, often, never) Respondents were given 4 points for always, 3 points for sometimes, 2 for often, and 1 for never. All parts of the questionnaires were self-administered.

Data Collection Procedure

Before data collection, a transmittal letter was sent to the registrar's office to acquire preliminary data needed to accumulate the number of School of Nursing and Health Sciences enrolled students. From that, another transmittal letter was sent to the University's dean of the School of Nursing and Health Sciences and to the Research coordinator requesting authorization and consent to perform the study. The nursing students' agreement was obtained next and secured by explaining the goal of the study. The questionnaire was provided after the respondents reviewed the study's terms and conditions. While waiting for the complete date of entry and analysis, completed questionnaire responses were gathered, tabulated, and stored in a secure location. Following the retrieval of the questionnaire, data processing and interpretation occurred. The study's findings were presented in tables or graphs dependent on the variables of the study.

Statistical Analysis

In analyzing the data, descriptive statistics such as mean, percentage, and frequency distribution as the most appropriate statistical measures were utilized to arrive at a definite interpretation of each item, while Chi-square and Pearson- R for computing the significant relationship of the variables being correlated.

Ethical Considerations

Informed consent forms that guarantee their complete privacy during the experiment were provided to the respondents. Sufficient time was given for the respondents to complete the questionnaire, ensuring that each question was adequately thought out. Rigorous anonymity was ensured regarding the answer to guarantee data protection. Survey responses were gathered, computed, and maintained for security purposes until data input and analysis. The researchers discussed ethical standards including truthfulness, impartiality, respect for property rights, social responsibility, confidentiality, non-discrimination, and others

RESULTS

1. Respondents' Socio-demographic Profile

Table 1 presents the socio-demographic profile of the respondents in the study. The socio-demographic profile includes their age, sex, civil status, religion, and year level.

*Age***.** Results show that most of the respondents belong to the 19-21 age range with 68.63%. The results imply that most of the respondents are in young adulthood. People in this age group are concerned with intimacy vs. isolation. During this time, major conflict may arise as this age group attempts to form longer commitments outside of the family, with varying degrees of success (Erikson, 1984).

Sex. Regards to sex of the respondents, most were female with 81.96%. The result implies that the female gender dominated the respondents during the data collection. According to Chang & Jeong (2021), despite a continuous growth in the number of male nurses, nursing remains a profession dominated by women.

Civil Status. Results show that most of the respondents were single with 99.61%. This implies that respondents were not married during the data collection.

Religion. With regards to religion, results show that most of the respondents were Roman Catholic with 76.86%. The results imply that the Roman Catholic religion dominated the respondents during the data collection. Statista Research Department (2021) stated that as of 2015, most Filipino households were affiliated with the Roman Catholic religion.

Year Level. Results in Table 1 show that most of the respondents were third-year students. This implies that third-year students participated in the study more than second and fourth-year students.

TABLE 1. DEMOGRAPHIC PROFILE DISTRIBUTION

Variables			*f*	%
Age	19-21		175	68.63
	22-24		76	29.80
	25-27		4	1.57
		Total	255	100.00
Sex	Male		46	18.04
	Female		209	81.96
		Total	255	100.00
Civil Status	Single		254	99.61
	Married		1	0.39
Religion	Roman Catholic		196	76.86
	SDA		15	5.88
	Born Again		12	4.71
	IFI		11	4.31
	INC		8	3.14
	UCCP		6	2.35
	Four Square		2	0.78
	CJC		1	0.39
	Bible Baptist		1	0.39
	Jehovah's Witness		1	0.39
	A/G		1	0.39

	Christian Baptist		1	0.39
		Total	255	100.00
Year Level	Second Year		78	30.59
	Third Year		120	47.06
	Fourth Year		57	22.35
		Total	255	100.00

2. Respondents' Level of Knowledge on Infection Control

The survey determines respondents' level of knowledge of infection control based on 20 true/false questions. The results are presented in Table 2 below, showing a high percentage, close to 90% or more, in all the statements except statement 17. The study focuses on standard precautions and they established that respondents have knowledge on its implementation disregardless the patient's diagnosis. More relevantly, according to Bailley et al. (2015), nursing students fares better than their counter-parts from the medical and radiology field in standard precaution knowledge.

These results underscore the importance of hand cleaning with all the respondents identified as having good knowledge on how to implement practices such as washing of hands after touching the patients' surroundings and alcohol rubbing once the gloves have been removed. It has been indicated that nursing students have superior performance to medical students on hand hygiene knowledge, as propped by several studies.

The study also reveals a need to adopt proper use of personal protective equipment while handling infected people. As for the understanding of the barriers provided by PPE concerning infectious materials the respondents show sufficient literacy level. Also, while handling the issue of glove replacement during patient care, the respondents' response reflects a high level of understanding the need for the same.

The awareness of the respondents regarding the protective use of a surgical mask, gown as well as aprons during possible splash of blood and body fluids appears to be very well enhanced. This is in line with the study by Colet et al. (2017) whereby nursing students have relatively high commitment to practices various protection measures.

The respondents show an understanding of the fact that one has to doff all the PPE after leaving the patient's area to avoid spreading the pathogen. Moreover, the study also emphasizes the understanding that environment such as surfaces, linen and waste products may act ase sources of infection if well handled.

Knowledge about the disposal of used ampoules in clinical waste is well understood, but there is a lower awareness of the inappropriateness of recapping needles after use. The study by Aldiabat et al. (2021) indicates that student nurses may lack awareness of needle stick injury prevention methods.

Finally, the respondents acknowledge the importance of reporting injuries caused by sharp instruments and the need for puncture-proof containers for sharp objects' proper disposal. The study underscores the potential risks associated with needle stick injuries, emphasizing the importance of educational interventions in promoting compliance with Universal Precautions.

In summary, the study reveals a generally high level of knowledge on infection control practices among respondents, with a few areas for improvement, particularly in needle stick injury prevention and awareness of certain precautionary measures.

Table 2. Level of Knowledge on Infection Control

Questions	Correct		Incorrect	
	f	%	f	%
1. Standard precautions are used for the care of all patients regardless of their diagnosis and perceived infection status.	220	86.27	35	13.72
2. Isolation precaution is one of the elements in standard precaution.	234	91.76	21	8.23
3. Washing hands after contact with the patient's environment is one of the elements in standard precaution.	253	99.21	2	0.78
4. Alcohol-based rubs are used after removing gloves.	235	92.15	20	7.84
5. Performing hand hygiene is required before and after patient care.	252	98.82	3	1.17
6. Hands should be washed with soap and water before and after handling potentially infectious materials irrespective of wearing gloves.	252	98.82	3	1.17
7. PPE is important in infection control because it acts as a barrier between infectious material such as viral and bacterial contaminants and your skin, mouth, nose, or eyes (mucous membranes).	253	99.21	2	0.78
8. Gloves must be worn every time during handling potentially infectious materials.	252	98.82	3	1.17
9. Gloves must be changed during patient care if you move hands from contaminated body site to clean body site.	255	100	0	100
10. Surgical masks can protect the nose and mouth when procedures and activities are generate splashes or sprays of blood and body fluids.	251	98.43	4	1.56
11. The purpose of using a gown or apron is to protect clothes from splashes or sprays of blood and body fluids.	251	98.43	4	1.56
12. Removed all personal protective equipment (PPE) before leaving the patient's environment.	174	68.23	81	31.76
13. Stationary, telephones kept in wards, and doorknobs can be sources of infections.	245	96.07	10	3.92
14. All linen from an infectious patient should be thrown in a red linen bag even when it is free from visible blood or body fluids.	244	95.68	11	39.21
15. Segregation of clinical and non-clinical waste is important for preventing the spread of infection.	254	99.60	1	0.39
16. Ampoules injection that has been used must be disposed of in the clinical waste.	238	93.33	17	6.66
17. Recapping of needles, in general, is not appropriate.	104	40.78	151	59.21
18. If you puncture hand with sharp instruments, you must report to the concerned authorities.	247	96.86	8	3.13

19. Puncture-proof containers should be used for disposal of sharps objects.	253	99.21	2	0.78
20. Mask must be placed on coughing patients to prevent potential dissemination of infectious respiratory secretions from the patient to others.	250	98.03	5	1.96

3. Respondents' Level of Attitude on Infection Control

Table 3 presents the results of the respondents' attitudes toward infection control, with 14 statements rated on a scale of strongly agree, agree, disagree, and strongly disagree. Respondents strongly agreed on statements 2, 4, 5, 8, 11, 12, and 13, agreed on statements 1, 7, and 14, and disagreed on statements 3, 6, 9, and 10.

The study explores the respondents' attitudes towards standard precautions, revealing that they find it challenging to follow them, aligning with the study by Hyunjin & Kyung (2015) that identified instances of noncompliance among nursing students working in hazardous areas. However, there is a strong belief among respondents that standard precautions effectively prevent the spread of infections between patients and healthcare workers (HCWs), supported by the positive relationship between self-efficacy and awareness demonstrated in the study by Devadass et al. (2022).

Respondents' express disagreement with the notion that infectious diseases can be treated without the need for personal protective equipment (PPE), indicating a belief in the necessity of PPE to prevent the spread of infectious diseases. The study by Hussami & Darawad (2013) supports the positive attitudes of nursing students towards infection prevention precautions, particularly the use of PPE during emergencies.

Positive attitudes are also evident in respondents' strong agreement with the importance of performing hand hygiene before and after any patient intervention, supported by the study of Barret & Randle (2018) highlighting factors influencing hand hygiene compliance. Conversely, there is a positive attitude towards changing gloves during procedures, despite potential discomfort, as indicated by the study of Davey et al. (2021).

Respondents strongly agree on the importance of healthcare providers ensuring the availability of protective barriers, emphasizing the need for adequate resources for infection control readiness. They also disagree with the idea that HCWs should avoid using PPE due to potential psychological harm to patients, aligning with positive attitudes towards PPE use found in the study by Hussami & Darawad (2013).

There is a collective belief among respondents that stationary items, telephones, and doorknobs can be sources of infection, in line with the understanding of environmental contamination contributing to healthcare-associated infections, as discussed by Alangaden et al. (2018).

Positive attitudes persist in respondents' strong agreement with the segregation of clinical and non-clinical waste to prevent the transmission of infections, supported by the importance of safe disposal highlighted in the study by Blenkharn (2006).

The study reflects respondents' strong agreement that all healthcare workers should ensure the adequate disinfection of medical equipment, indicating a shared responsibility for maintaining hygiene standards.

Lastly, respondents strongly agree that adhering to standard and contact precautions can reduce the transmission of infectious organisms, aligning with the findings of Hyunjin & Kyung (2015) on the positive attitudes of nursing students towards routine precautions.

In conclusion, the study provides insights into the attitudes of respondents regarding infection control, highlighting positive perceptions toward key practices and emphasizing the importance of resources and

adherence to precautions in preventing the spread of infections.

Table 3. Level of Attitude on Infection Control

Statement	4		3		2		1		WM
	f	%	f	%	f	%	f	%	
1. Standard precaution is not easy to follow.	12	4.70	53	20.78	123	48.23	67	26.27	2.039
2. Standard precautions prevent the spread of infections from patients to HCWs and vice versa.	177	69.41	72	28.23	4	1.56	2	0.78	3.663
3. Infectious disease can be treated hence PPE are not required.	8	3.13	32	12.54	85	33.33	130	50.98	1.678
4. Prefers to perform hand hygiene before and after any intervention with patients.	218	85.49	29	11.37	3	1.17	4	1.56	3.815
5. PPE can be used during emergencies.	61	23.92	151	58.82	38	14.9	5	1.96	3.051
6. Changing gloves is not necessary during procedures even if heavily contaminated.	11	4.31	20	7.84	49	19.21	175	68.62	1.478
7. It is difficult to work wearing PPE.	21	8.23	138	54.11	72	28.23	24	9.41	2.612
8. Healthcare providers should ensure the availability of adequate protective barriers.	175	68.62	66	25.88	10	3.92	4	1.56	3.616
9. HCW's should not use PPE because it may harm patients psychologically.	12	4.7	36	14.11	113	44.31	94	36.86	1.867
10. Stationaries, telephones, and doorknobs are not sources of infections.	12	4.7	23	9.01	78	30.58	142	55.68	1.627
11. Segregation of clinical and non-clinical waste is useful to prevent transmission of infections from one to another	205	80.39	44	17.25	3	1.17	3	1.17	3.769
12. Adequate disinfection of medical equipment should be ensured by all HCWs.	195	76.47	54	21.17	5	1.96	1	0.39	3.737

13. Transmission of infectious organisms can be reduced by adhering to standard and contact precautions.	187	73.33	62	24.31	3	1.17	3	1.17	3.698
14. It is not logical to assume all patients contagious unless their infection has been confirmed.	30	11.76	82	32.15	76	29.8	67	26.27	2.294
Average Weighted Mean									2.78

4. Respondents' Level of Practice on Infection Control

Table 4 outlines the respondents' practices related to infection control, consisting of 15 statements rated on a scale of always, sometimes, often, and never. The results indicate a high level of compliance with various infection control practices.

Respondents consistently engage in hand hygiene practices, including always washing hands when in contact with patients, always performing hand hygiene after removing gloves, and always washing hands immediately after contacting any blood, body fluid, secretion, excretion, or dirty substances. The study by Barret & Randle (2018) supports the importance of hand hygiene, identifying factors influencing compliance such as time constraints and the influence of other healthcare workers.

Wearing gloves is a common practice, with respondents consistently using them when drawing blood samples, disposing of stool and urine, handling impaired patient skin, dealing with patient's mucosa, handling saliva or sputum culture, performing parenteral injections of medications, dressing wounds, and coming in contact with blood. The studies by Jain et al. (2012), Guimarães et al. (2010), and Anuar et al. (2021) provide additional insights into glove usage and hand hygiene practices among healthcare students, highlighting the importance of these measures in infection control.

Moreover, respondents demonstrate a high level of compliance in wearing masks, protective eye patches or goggles, and protective suits or gowns during operations or procedures that might induce the spraying of blood, body fluids, secretions, or excretions. Colet et al. (2017) support this finding, indicating high compliance among nursing students in wearing surgical masks, goggles, face shields, and aprons to prevent potential exposure to splashes or splatters of blood.

Additionally, respondents consistently dispose of needles, blades, or any single-use sharp objects in sharp disposal containers after use, emphasizing the importance of proper sharps disposal. The study by Koval et al. (2015) reinforces the significance of educational interventions to increase compliance with Universal Precautions and postexposure protocols.

In summary, the study reveals a generally high level of compliance among respondents in various infection control practices. These practices contribute to the prevention of infections and are supported by previous research, demonstrating the importance of hand hygiene, glove usage, and proper disposal of sharps in healthcare settings.

Table 4. Level of Practice on Infection Control

Practices	4		3		2		1		WM
	f	%	f	%	f	%	f	%	
1. Always performs hand hygiene when they come in contact with patients.	230	90.19	23	9.01	2	0.78	0	0	3.894
2. Always performs hand hygiene after taking off gloves.	208	81.56	44	17.25	3	1.17	0	0	3.804
3. Always washes hands immediately after contacting any blood, body fluid, secretion, excretion, or dirty substances.	230	90.9	22	8.62	3	1.17	0	0	3.89
4. Always wears gloves when drawing blood samples.	226	88.62	23	9.01	6	2.35	0	0	3.863
5. Always wears gloves when disposing of stool urine.	230	90.19	23	9.01	2	0.78	0	0	3.894
6. Always wears gloves when handling impaired patient skin.	223	87.45	26	10.19	6	2.35	0	0	3.851
7. Always wears gloves when handling patient's mucosa.	238	93.33	15	5.88	1	0.39	1	0.39	3.922
8. Always wears gloves when handling saliva or sputum culture.	235	92.15	18	7.05	1	0.39	1	0.39	3.91
9. Always wears gloves when performing parenteral injections of medications.	218	85.49	34	13.33	1	0.39	2	0.78	3.835
10. Always wears gloves when dressing wounds.	229	89.8	23	9.01	3	1.17	0	0	3.886
11. Always wears gloves when they come in contact with blood.	234	91.76	20	7.84	1	0.39	0	0	3.914
12. Always wears mask when performing operations/procedures that might induce the spraying of blood, body fluid, secretions, or excretions.	232	90.98	21	8.23	2	0.78	0	0	3.902
13. Always wears a protective eye patch or goggle when performing operations/procedures that might induce spraying of blood, body fluid, secretions, or excretions.	192	75.29	52	20.39	6	2.35	4	1.56	3.816
14. Always wears protective suits or gown when performing operations/procedures that might	226	88.62	25	9.8	4	1.56	0	0	3.871

induce spraying of blood, body fluid, secretions, or excretions.									
15. Always dispose of needles, blades, or any other single use sharp objects in a sharp disposal container after use.	241	94.5	11	4.31	3	1.17	0	0	3.933
Average	3.88								

5. Test of Relationship between Variables

A. Correlation between Socio-demographic Profile and Level of Knowledge on Infection Control

Table 5 presents the relationship of the respondents' socio-demographic profile (age, sex, civil status, religion, year level) and knowledge on infection control. Results show that there is no significant relationship that exists between the respondents' socio-demographic profile (age, sex, civil status, religion, year level) and the respondents' knowledge of infection control. This implies that the socio-demographic profile (age, sex, civil status, religion, year level) does affect the knowledge of infection control. This result coincides with the study conducted by Akande (2020) which states that the socio-demographic features of the nurses did not affect their knowledge of tuberculosis infection control.

Table 5. Correlation between Socio-demographic profile and Level of Knowledge of Infection Control

DEMOGRAPHIC PROFILE	CHI-SQUARE VALUE($\chi 2$)	DEGREE OF FREEDOM (DF)	P-VALUE
AGE	12.642	12	0.396
SEX	2.922	6	0.819
CIVIL STATUS	3.487	6	0.746
RELIGION	9.195	18	0.955
YEAR LEVEL	16.823	12	0.156

B. Correlation between Socio-demographic Profile and Level of Attitude on Infection Control

Table 6 represents the test relationship between the respondents' socio-demographic profile (age, sex, civil status, religion, year level) and the respondents' attitude on infection control. Results revealed that there is no significant relationship between the socio-demographic profile (age, religion, year level) and attitude towards infection control. This result implies that socio-demographic profile (age, religion, year level) does not affect the respondents' attitude on infection control. Meanwhile, sex and civil status have a significant relationship to the attitude on infection control. This implies that sex and civil status affects the respondents' attitude towards infection control.

According to the findings of the study conducted by Bimerew and Muhawenimana (2022), the results demonstrate a difference in levels of knowledge, attitudes, and hand washing practices across genders, with female nurses having a better attitude than male nurses and a greater degree of hand washing practice.

On the study conducted by Dong et al. (2021), it was found that there were significant differences in attitude and nosocomial infection prevention strategies between nurses who were single and those who were married and had children. This is because the latter group has more complicated family relationships, which makes them more concerned about their families' and children's health in addition to their own, leading to increased use of nosocomial infection prevention strategies.

Table 6. Correlation between Socio-demographic Profile and Level of Attitude on Infection Control

DEMOGRAPHIC PROFILE	CHI-SQUARE VALUE(χ2)	DEGREE OF FREEDOM (DF)	P-VALUE
AGE	3.138	6	0.791
SEX	6.905	3	0.075
CIVIL STATUS	10.127	3	0.018
RELIGION	12.189	12	0.431
YEAR LEVEL	7.52	6	0.275

C. Correlation between Socio-demographic Profile and Practices on Infection Control

Table 7. present the test relationship between socio-demographic (age, sex, civil status, religion, year level) and practices on infection control. Result shows that there is no significant relationship between the socio-demographic profile (age, sex, civil status, religion, year level), and the respondents' practices on infection control. This result implies that the socio-demographic profile (age, sex, civil status, religion, year level) does not affect the respondents' practices on infection control. This agree to the findings of the study conducted by Ayed et al. (2015), which states that there was no statistically significant correlation between mean practice scores and the sociodemographic profile, including age, years of experience, training program, and degree. Particularly nurses are frequently exposed to different infections while performing their nursing duties. As a result, nurses should be well-versed in and adhere strictly to infection control procedures.

Table 7. Correlation between Socio-demographic Profile and Practices on Infection Control

DEMOGRAPHIC PROFILE	CHI-SQUARE VALUE(χ2)	DEGREE OF FREEDOM (DF)	P-VALUE
AGE	1.264	4	0.867
SEX	2.063	2	0.356
CIVIL STATUS	0.076	2	0.963
RELIGION	11.778	8	0.161
YEAR LEVEL	4.161	4	0.385

D. Correlation among Knowledge, Attitude, and Practices of Infection Control

Table 8 presents the test relationship among the respondents' knowledge, attitude, and practices on infection control. Results revealed that there is no significant relationship that exists between the three variables. This implies that each variable does not affect each other. However, this result contradicts with findings from other related studies. On the study conducted by Jamiran & Ludin (2021), it was discovered that there is a link between gender and attitude level. The findings reveal that nursing students with strong

knowledge have much better attitudes, and good attitudes have significantly better practice. Gender and attitude level are associated, but there are no significant relationships between other sociodemographic factors and infection control knowledge, attitude, and practice. There are also correlations between infection control knowledge, attitude, and practice.

Table 8. Correlation among Knowledge, Attitude, and Practices of Infection Control

VARIABLE		VALUE
KNOWLEDGE-ATTITUDE	Pearson's r	0.022
	p-value	0.732
	Shapiro-Wilk	0.923
	p-value	<0.001
KNOWLEDGE-PRACTICES	Pearson's r	0.116
	p-value	0.065
	Shapiro-Wilk	0.504
	p-value	<0.001
PRACTICES-ATTITUDE	Pearson's r	0.121
	p-value	0.054
	Shapiro-Wilk	0.432
	p-value	<0.001

SUMMARY OF FINDINGS

On the first objective of the study, which is to determine the socio-demographic profile of the respondents. The findings show that majority of the respondents belonged to age group 19-21 years old (68.63%), female (81.96%), single (99.61%), Roman Catholic (76.86%), third year students (47.06%).

The second objective of the study is to assess the respondents' level of knowledge on infection control. Results revealed that majority of the respondents have adequate level of knowledge on infection control with 92%.

On the third objective of the study, which is to assess the respondents' level of attitude on infection control. Results show that majority of the respondents had a positive attitude towards the statements provided.

On the fourth objective which was to assess the respondents' practice on infection control. Results revealed that majority of the respondents always perform practices which promotes the standard precautions on infection control.

On the fifth objective of the study, results revealed that there is no significant relationship between the variables socio-demographic profile (age, sex, civil status, religion, year level) and knowledge on infection control. This implies that socio-demographic profile does not affect the respondent's knowledge on infection control.

On the sixth objective of the study, results show that there is no existing relationship between the socio-demographic profile (age, religion, year level) and attitude towards infection control. Meanwhile, sex and civil status was found to have significant relationship with attitude. This implies that sex and civil status affects the respondents' attitude towards infection control.

On the seventh objective of the study, the results show that socio-demographic profile (age, sex, civil sta-

tus, religion, year level) does not have a significant relationship to the respondents' practice on infection control. This implies that socio-demographic profile of the respondents does not affect their practice on infection control.

On the eighth objective of the study, the results revealed that there is no significant relationship existing among the variables knowledge, attitude, and practice. This implies that the three variables do not affect each other.

Conclusions

After thorough analysis of the results based on the findings gathered from the study, the following conclusions were drawn: Most of the respondents were female, young adult (19-21 years old), single, Roman Catholic, and third year students. Most of the respondents have adequate knowledge on infection control. Most of the respondents have a positive attitude towards infection control. Most of the respondents always practice standard precautions on infection control. There is no significant relationship between socio-demographic profile (age, sex, civil status, religion, year level) and level of knowledge on infection control. There is no significant relationship between socio-demographic profile (age, religion, year level) and attitude on infection control while sex and civil status have. There is no significant relationship between socio-demographic profile and (age, sex, civil status, religion, year level) and practices on infection control. There is no significant relationship between the variables level of knowledge, attitude, and practice on infection control.

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