The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 6, 2025

KNOWLEDGE AND PRACTICE OF STANDARD PRECAUTIONS FOR INFECTION CONTROL AMONG GENERIC BSN STUDENTS IN PUBLIC SECTORS OF LAHORE

Munazza Kanwal[*1], Ayesha Sadaf[2], Safia Sultana[3]

[*1,2,3]*Aligarh College of Nursing and Allied Health Sciences Lahore*

[*1]irfan.haider.uhs@gmail.com

DOI: https://doi.org/10.5281/zenodo.15753636

Keywords

Article History
Received on 20 May 2025
Accepted on 20 June 2025
Published on 27 June 2025

Corresponding Author: *
Munazza Kanwal

Abstract

Introduction: *Infection control is a cornerstone of safe healthcare delivery, particularly in preventing healthcare-associated infections (HAIs). Standard precautions, including proper use of personal protective equipment (PPE) and safe handling of contaminated materials, are critical for nursing professionals. However, gaps in knowledge and practice among nursing students can compromise patient safety. This study evaluates the knowledge and practice of standard precautions for infection control among Generic Bachelor of Science in Nursing (BSN) students in public sector institutions in Lahore, Pakistan, to identify areas for educational improvement.*

Method: *A cross-sectional descriptive survey was conducted over three months, involving 170 BSN 1st and 2nd-year students from the College of Nursing at Services Hospital Lahore and Allama Iqbal Medical College, Lahore. A convenience sampling technique was used to recruit participants. Data were collected using an adapted Knowledge, Attitude, and Practice (KAP) questionnaire, consisting of demographic data, 18 knowledge-based questions (Yes/No/Don't Know), and 16 practice-based questions (Never/Sometimes/Always). The questionnaire was distributed in printed form, with 30 minutes provided for completion. Data were analyzed using SPSS version 21, employing descriptive statistics (frequencies, percentages, tables, and graphs) and independent t-tests to compare knowledge and practice. Ethical considerations included obtaining informed consent and ensuring participant confidentiality.*

Results: *The sample comprised 85.9% female students, 46.5% aged 22-24 years, 54.7% married, and a near-even distribution of 1st-year (48.8%) and 2nd-year (51.2%) students. Knowledge assessment revealed significant gaps: only 33.5% correctly identified the need to discard needles in sharp boxes, 34.7% recognized the necessity of surgical gloves in all patient care procedures, and 32.4% understood that standard precautions apply universally. Practice-related responses showed inconsistencies, with 39.4% unsure about precautions for contact with patient sweat and 44.1% incorrectly believing precautions were unnecessary for urine or stool contact. High levels of uncertainty (e.g.,* 36.5% for isolation gown use) underscored challenges in translating knowledge into practice.

Conclusions

The study highlights notable deficiencies in BSN students' knowledge and practice

of standard precautions, indicating a need for enhanced educational interventions. Targeted training, hands-on simulations, and curriculum enhancements are essential to address misconceptions, improve competency, and ensure consistent application of infection control protocols. Strengthening these areas will better prepare nursing students to prevent HAIs and enhance patient safety.

INTRODUCTION

Infection control is a critical component of healthcare practice, ensuring the safety of both healthcare workers and patients (Centers for Disease Control and Prevention [CDC], 2020). Standard precautions represent a set of fundamental measures aimed at preventing the transmission of infectious agents in healthcare settings (Siegel et al., 2019). These precautions are vital for minimizing the risk of healthcare-associated infections (HAIs) and maintaining the overall quality of healthcare services (World Health Organization [WHO], 2019). Among healthcare professionals, nursing students play a pivotal role in infection control as they are the future front-line caregivers (Association for Professionals in Infection Control and Epidemiology [APIC], 2020). Therefore, it is essential to assess their knowledge and practice of standard precautions to ensure the highest standards of infection control in healthcare settings (Siegel et al., 2019).

In the bustling metropolis of Lahore, Pakistan, the public healthcare sector serves as a cornerstone for the delivery of healthcare services to a significant portion of the population (WorldBank,2021). Lahore is home to various prestigious educational institutions, including nursing schools that train the next generation of healthcare professionals (Higher Education Commission of Pakistan, 2020). Among these students, those pursuing a Bachelor of Science in Nursing (BSN) represent a vital cohort. Their understanding and implementation of standard precautions hold paramount importance in maintaining the public's health and safety (Siegel et al., 2019).This study seeks to investigate the knowledge and practice of standard precautions for infection control among generic BSN students in public sectors of Lahore. It aims to shed light on the extent to which these students are equipped with the necessary knowledge and whether they effectively apply this knowledge in their clinical practice.

The findings of this research are expected to provide valuable insights for healthcare educators, policymakers, and stakeholders in the Lahore healthcare system, enabling them to develop targeted interventions to improve infection control practices among future nursing professionals.

The examination of knowledge and implementation of standard precautions for infection control among generic Bachelor of Science in Nursing (BSN) students within the public healthcare sector of Lahore stands as a subject of paramount importance within the health care realm. Infection control forms a foundational pillar of healthcare practice, with the primary objective of curtailing the transmission of infectious agents within healthcare settings (Siegel et al., 2019). Generic BSN students, as the prospective nursing workforce, bear the responsibility of upholding healthcare safety, not only for themselves but also for patients under their care (CDC, 2020). This research study embarks on an exploration of the extent of knowledge and application of infection control measures among these students, offering valuable insights into the preparedness of Lahore's future healthcare professionals in the public healthcare sector.

Understanding the knowledge and application of standard precautions among Bachelor of Science in Nursing (BSN) students holds a position of paramount significance for several compelling reasons. Firstly, healthcare-associated infections (HAIs) represent a global health concern that significantly contributes to morbidity, mortality, and escalating healthcare expenditures (World Health Organization [WHO], 2019). Insufficient infection control measures within healthcare settings can precipitate outbreaks, thereby jeopardizing the well-being of both patients and healthcare workers (Siegel et al., 2019). Given that nursing students actively engage in patient care during their clinical training, their unwavering commitment to adhering to standard precautions stands as an indispensable element in the prevention of HAIs (CDC, 2020).

Secondly, Lahore's public health care sector, characterized by its vastness and diversity, caters to a

broad spectrum of patient populations with varying healthcare needs (World Bank,2021). Consequently, it become simperative to ensure that nursing students immersed in these dynamic healthcare settings possess a comprehensive understanding of infection control practices. This, in turn, guarantees the preservation of high-quality healthcare delivery and patient safety, as these students are the future backbone of the healthcare workforce in Lahore's public healthcare sector. The identification of knowledge or practice deficiencies among these students becomes a fundamental step toward formulating targeted interventions aimed at addressing these gaps, ultimately culminating in enhanced healthcare outcomes and a reduction in the burden of HAIs (Siegel et al., 2019; WHO, 2019).

Furthermore, it is crucial to underscore that the insights drawn from the outcomes of this research study possess the potential for far-reaching influence, extending their impact not solely within Lahore but also to other regions and nations grappling with analogous health care challenges. The broader significance of this research is underscored by the fact that it has the capacity to transcend geographical boundaries and resonate with nursing education programs worldwide. With the profound insights gleaned from this study, nursing educators, both in Lahore and across the globe, will have the opportunity to tailor their curriculum development and clinical training programs to an even greater degree of precision (Higher Education Commission of Pakistan, 2020). This precision ensures that nursing students are not only equipped with the fundamental knowledge of infection control practices but are also in stilled with the competencies required to translate that knowledge into effective practice.

In essence, this research has the potential to catalyze a paradigm shift in nursing education. It serves as a clarion call to educators, prompting them to revisit and refine their teaching methodologies, course structures, and clinical training protocols. By doing so, nursing education programs can foster an environment that nurtures the development of nursing graduates as highly competent and ethically responsible healthcare professionals (Higher EducationCommissionofPakistan,2020).Thisheightenedlevelofpreparednessensuresthat nursing professionals are not just well-versed in theory but are also adept at the practical application of infection control measures, thereby becoming in valuable assets in safeguarding the safety and well-being of patients in the ever-evolving landscape of healthcare. The ripple effects of this research extend beyond the boundaries of Lahore, influencing nursing education globally and contributing to a safer, more effective healthcare sector for all.

Research Objectives

1. To conduct an assessment of the level of knowledge regarding standard precautions for infection control among generic Bachelor of Science in Nursing (BSN) students in public sectors of Lahore.
2. To critically evaluate the practical application and adherence to standard precautions for infection control among generic BSN students in public sectors of Lahore.
3. To identify and explore the influential factors that may contribute to variations in the knowledge and practical implementation of standard precautions among nursing students within the specified context.
4. To formulate and provide evidence-based recommendations aimed at enhancing the qualityofeducationandtrainingprovidedtonursingstudentsintherealmofinfection control practices, particularly within Lahore's public healthcare sector.

Research Questions

1. What is the current level of knowledge regarding standard precautions for infection control among generic BSN students in public sectors hospitals of Lahore?
2. How do generic BSN students in public sectors of Lahore effectively incorporate and implement standard precautions during their clinical practice?
3. What intrinsic and extrinsic factors can be identified as potential contributors to variations in the knowledge and practical application of standard precautions among nursing students?
4. What evidence-based strategies can be proposed and recommended to augment both the knowledge and practical implementation of standard precautions among generic BSN students within the public healthcare sector of Lahore?

This introductory segment lays a solid foundation for conducting an extensive and thorough investigation into the realm of knowledge and practice concerning standard precautions for infection control within the demographic of generic Bachelor of Science in Nursing (BSN) students, who are integral to Lahore's sprawling public healthcare sector. Through an in-depth scrutiny of the existing landscape and the multifaceted factors that contribute to the state of infection control measures, this research endeavor aspires to offer profound insights that can be harnessed to elevate the standards of infection control practices within the student body of nurses. The ultimate goal is to translate these insights into tangible improvements in healthcare outcomes for the diverse and vast population under the care of Lahore's expansive public healthcare system. The upcoming sections of this research project are dedicated to a comprehensive exploration of every facet of this critical healthcare issue. They will encompass a meticulous examination of the research methodology employed to collect and analyze data, ensuring that the investigation is both rigorous and comprehensive. The literature review will scrutinize existing research, theories, and best practices related to infection control, providing a robust foundation upon which to build our understanding. The data analysis phase will delve deeply into the gathered information, unearthing patterns, trends, and correlations that can inform our conclusions. Finally, the recommendations that emerge from this research will be evidence-based, drawing upon the insights gleaned throughout the study.

In essence, this study is poised to provide a multifaceted perspective on the knowledge and practice of standard precautions for infection control among generic BSN students inLahore's public healthcare sector. The aim is not only to uncover the current status of infection control practices but also to catalyze a transformation that fosters better healthcare outcomes, exemplifying the commitment to excellence and safety in healthcare education and practice.

LITERATURE REVIEW

Infection control is a crucial aspect of healthcare practice, as it plays a significant role in preventing the spread of infectious diseases within healthcare settings. Standard precautions, as defined by the Centers for Disease Control and Prevention (CDC, 2019), are a set of infection prevention practices that healthcare professionals should use to minimize the risk of transmittinginfections. Amongthehealthcareprofessionals,nursingstudentsrepresentavital group as they are the future workforce. Understanding the knowledge and practice of standard precautions among Generic Bachelor of Science in Nursing (BSN) students in the public healthcare sector of Lahore is critical in ensuring the safety of both patients and healthcare workers.

Infection control holds paramount significance in the realm of healthcare, primarily due to its pivotal role in averting the propagation of infectious diseases within various healthcare environments. A cornerstone in this endeavor is the utilization of standard precautions, as meticulously elucidated by the Centers for Disease Control and Prevention (CDC) in their authoritative guidelines, dating back to 2019. These guidelines prescribe a comprehensive framework of preventive measures that healthcare professionals ought to adopt as a means of mitigating the peril associated with the transmission of infectious agents.

Among the cohort of healthcare professionals, nursing students occupy a uniquely crucial position, as they are the torchbearers of the future healthcare workforce. To ensure the robustness of the healthcare system, it is of paramount importance to comprehensively assess and grasp the depth of knowledge and adherence to these standard precautions within this demographic, particularly Generic Bachelor of Science in Nursing (BSN) students who are engaged in public health care institutions in the city of Lahore.Their understanding and integration of these precautionary measures into their clinical practice directly influence the well-being and safety of patients, as well as the protection of the healthcare personnel who serve on the frontlines of healthcare delivery. The investigation and analysis of the knowledge and practice of standard precautions among this specific cadre of BSN students in Lahore's public healthcare sector is pivotal for several reasons. First and foremost, it has a profound impact on the quality of patient care and the overall efficacy of the healthcare system. By thoroughly comprehending the extent of

their cognizance and their ability to translate this knowledge into tangible, effective practice, healthcare institutions can identify areas that require improvement and enact targeted interventions to bolster the standard precaution compliance. Moreover, considering the emerging threats posed by infectious diseases and the dynamic nature of the healthcare landscape, continuous evaluation of this aspect is essential. It facilitates the identification of evolving challenges and the development of more adaptive and effective infection control strategies, aligning with the ever-changing needs of the healthcare sector. Further more, the safety and well-being of healthcare workers, including nursing students, are also at stake. These individuals are at the forefront of patient care, and their potential exposure to infectious agents necessitates rigorous adherence to standard precautions. Therefore, an in-depth exploration of their compliance and the factors that may hinder or facilitate it is essential for enhancing their safety and reducing occupational risks.

The assessment of the Generic BSN students operating in Lahore's public healthcare sector is an imperative endeavor. It holds the power to fortify the foundations of infection control, foster a culture of safety within healthcare institutions, and ultimately ensure the well-beingof patients and healthcare workers alike. This dynamic process of evaluation, adaptation, and improvement serves as a cornerstone in the relentless pursuit of excellence and effectiveness within the healthcare domain.

Knowledge of Standard Precautions: A Corner stone of Infection Control

The significance of comprehensive knowledge regarding standard precautions in the healthcare context cannot be overstated. It serves as the bedrock upon which the effective implementation of infection control measures is constructed. Scholars have underscored the pivotal role of knowledge in mitigating the transmission of infectious diseases within healthcare settings (Abbas et al., 2018; Raza et al., 2020).Abbas et al. (2018), in their study conducted within a Pakistani healthcare setting, discerned a disconcerting pattern among Bachelor of Science in Nursing (BSN) students. They found that these future healthcare professionals exhibited limited knowledge pertaining to standard precautions. This knowledge deficit extended across various critical areas, notably concerning hand hygiene, the appropriate use of personal protective equipment, and safety precautions associated with needlestick injuries. The findings from this study underscore the urgent necessity for targeted educational interventions aimed at bolstering the understanding of standard precautions among nursing students in Lahore (Abbas et al., 2018).

Furthermore, Raza et al. (2020)conducted a parallel investigation, specifically within thecity of Lahore, shedding light on a distressing lack of awareness among BSN students concerning the critical importance of adhering to standard precautions. This deficiency in awareness significantly contributes to the jeopardy of healthcare settings becoming hubs for disease transmission. The study by Raza et al. (2020) aligns with Abbas et al.'s (2018) findings, collectively emphasizing the urgency of educational strategies tailored to enhance the knowledge base of standard precautions among nursing students in Lahore. The implications of these research findings extend beyond the academic realm; they resonate within the operational dynamics of healthcare institutions. As the next generation of healthcare providers, nursing students play an instrumental role in patient care. Their knowledge, or lack thereof, ofstandardprecautionshasdirectimplicationsforpatientsafetyandthewell-being of healthcare workers. In light of this, interventions aimed at bridging the knowledge gap in this regard are of paramount importance. The pivotal role of knowledge in the context of standard precautions cannot be overstated. The findings of studies conducted by Abbas et al. (2018) and Raza et al. (2020) serve as compelling evidence of the pressing need for targeted educational strategies to augment the understanding of standard precautions among Generic Bachelor of Science in Nursing (BSN) students in Lahore, ultimately fortifying thefoundation of infection control within healthcare settings.

Practice of Standard Precautions: A Vital Component of Infection Control

In the realm of healthcare, while knowledge serves as the foundational pillar, the translation of this knowledge into practice assumes an equally critical

role. This essential component of infection control demands meticulous attention, as the actual application of standard precautions by healthcare professionals, particularly nursing students, can significantly impact patient safety and the overall well-being of healthcare settings (Alghanim et al., 2018; Saleem & Ahmed, 2018).A noteworthy study conducted by Alghanim et al. (2018) in the context of healthcare in Saudi Arabia unveiled a disconcerting pattern. They observed a marked inconsistency in the practice of standard precautions among nursing students. Several factors contributed to this inconsistency, including a lack of supervision, apprehension of peer judgment, and inadequacies in the existing healthcare infrastructure. These findings illuminate the multifaceted challenges faced by nursing students in translating their knowledge into consistent practice, emphasizing the need for a more structured and supportive environment (Alghanim et al., 2018).Drawing parallels, the situation in Lahore, particularly among Bachelor of Science in Nursing (BSN) students, is not immune to these challenges. Research conducted by Saleem and Ahmed (2018) pinpointed a concerning issue within the healthcare landscape of Pakistan. Despite nursing students possessing adequate knowledge of standard precautions ,the practical application of these essential measures was inconsistent. The implications of this gap between knowledge and practice are far-reaching and worrisome, as it not only compromises patient safety but also heightens the risk of healthcare-associated infections (Saleem & Ahmed, 2018).The existing gap between knowledge and practice of standard precautions is a matter of profound concern, transcending the academic and theoretical domains. Its ramifications are tangible within the operational dynamics of healthcare settings. Inconsistencies in adhering to these precautions expose both patients and healthcare workers to heightened risks of infectious diseases. To address this concern, multifaceted strategies are imperative, aimed at aligning knowledge with practice among nursing students in Lahore. Enhanced supervision, peer support systems, and fortified infrastructure are key components of such strategies, as suggested by Alghanim et al. (2018). Likewise, Saleem and Ahmed (2018) underscore the need for systematic interventions, such as tailored educational programs and stringent monitoring mechanisms, to bridge the knowledge-practice gap in the context of standard precautions. These concerted efforts are essential in establishing a healthcare environment where knowledge is consistently and effectively translated into practice, ensuring a safer and more effective healthcare system.

The practice of standard precautions is undeniably a pivotal aspect of infection control within healthcare settings. The research by Alghanim et al. (2018) and Saleem and Ahmed (2018) exemplifies the pressing need for comprehensive strategies to harmonize knowledge and practice among nursing students, ultimately fortifying the defense against healthcare-associated infections and enhancing the safety of both patients and healthcare workers.

Barriers to Compliance: Impediments in the Adherence to Standard Precautions

In the context of healthcare, various multifaceted obstacles have the potential to impede the knowledge acquisition and practical application of standard precautions among nursing students in Lahore.It is par amount to recognize the barriers, as they exert a substantial influence on the overall adherence to infection control measures, ultimately impacting the safety of patients and healthcare workers (Golechha, 2021; Saleem & Ahmed, 2018).

Lack of Curriculum Emphasis: The absence of adequate emphasis on infection control in the nursing curriculum emerges as a prominent barrier. This gap in educational focus diminishes the awareness and understanding of standard precautions, leaving students ill- equipped to implement these measures effectively (Golechha, 2021).

Inadequate Access to Personal Protective Equipment (PPE): An other significant hurdle is the inadequate availability of PPE. The scarcity of these essential protective resource's places nursing students in a precarious position, inhibiting their ability toapply standard precautions with confidence and effectiveness (Golechha, 2021).

Overcrowded and Resource-Constrained Clinical Settings: Nursing students often grapple with overcrowded and resource-constrained clinical

settings. In such environments, the implementation of standard precautions becomes challenging due to the overwhelming patient load and the paucity of resources and infrastructure (Saleem & Ahmed, 2018).

Lack of Role Models: The absence of role models who consistently adhere to standard precautions exacerbates the situation. Students often learn through observation andemulation, and a deficiency of exemplary figures who prioritize these measures can diminish the commitment to compliance (Saleem & Ahmed, 2018).

These barriers are not isolated challenges but interrelated aspects of a complex web that hampers the effectiveness of infection control within the healthcare sector. Recognizing and addressing these impediments is imperative for enhancing the compliance of Bachelor of Science in Nursing (BSN) students with standard precautions.

Interventions aimed at mitigating these barriers may encompass a spectrum of strategies, including curriculum reform to amplify the focus on infection control, ensuring a steady supply of PPE, streamlining clinical settings to reduce overcrowding, and cultivating a culture of adherence to standard precautions through the presence of role models and rigorous monitoring mechanisms (Golechha, 2021; Saleem & Ahmed, 2018).The formidable barriers that hinder the compliance of nursing students in Lahore with standard precautions are multifaceted and demand a comprehensive approach. These obstacles pose a significant risk to infection control and patient safety, underscoring the urgency of systematic measures to surmount them.

Interventions and Recommendations: Enhancing Adherence to Standard Precautions:

In light of the critical concerns regarding the knowledge-practice gap and barriers to compliance in the context of Generic Bachelor of Science in Nursing (BSN) students within Lahore's public healthcare sector, it is imperative to devise a comprehensive strategy that addresses these challenges effectively. The following interventions and recommendations represent a multifaceted approach to bridge the gap and foster a culture of adherence to standard precautions, thereby ensuring the safety of both patients and healthcare workers.

1. Curriculum Enhancement and Infection Control Training: To bolster the knowledge base and practical skills of BSN students, integration of comprehensive and practical infection control training into the nursing curriculum is paramount. This training should encompass up-to-date guidelines and best practices, instilling a deep understanding of the significance of standard precautions (Golechha, 2021).

2. Infrastructure Improvement: The enhancement of healthcare infrastructure is indispensable. This includes optimizing the layout and design of clinical settings to reduce overcrowdingandimprovetheefficiencyofcaredelivery. Adequateresourcesshouldbe allocated to create an environment conducive to the seamless implementation of standard precautions (Saleem & Ahmed, 2018).

3. Ensuring Access to Personal Protective Equipment (PPE): Ready availability of PPE is a non-negotiable component of infection control. Adequate supplies of PPE, such as masks, gloves, and gowns, should be consistently maintained to empower nursing students to adhere to standard precautions without reservation (Golechha, 2021).

4. Implementation of Monitoring and Supervision Mechanisms: To ensure the consistent and effective application of standard precautions, rigorous monitoring and supervision mechanisms should be established. Regular audits, feedback sessions, and mentorship programs can help nursing students receive guidance and encouragement in maintaining compliance (Alghanim et al., 2018).

The knowledge and practice of standard precautions in Lahore's public healthcare sector demand a multifaceted approach to bridge the existing gap and surmount the barriers to compliance. These recommendations collectively represent a holistic strategy designed to fortify infection control measures. Moreover, the significance of investing in the training and adherence of nursing students cannot be overstated, as they represent the future of healthcare and play an indispensable role in ensuring

the effectiveness of infection control within the public healthcare sector of Lahore.

METHODOLOGY

Research Design: The knowledge of nurses regarding standard precaution will be assessed with the help of a cross sectional descriptive survey. The information from the participants was collected at one point in time therefore, cross sectional design.

Population: Generic BS Nursing students of College of nursing, Services Hospital Lahore and College of nursing, Allama Iqbal medical college, Lahore

Time Period: This study will be carried out for a period of 3 months

Sampling: Convenient sampling technique will be used for the collection of data. This is non-probability sampling technique in which researcher selects subjects of his convenience and accessibility. A Sample of n = 170 was recruited from both selected hospitals.

Research Instrument: Data will be collected with the help of a Knowledge Attitude and practice based questionnaire adapted from thesis named " Knowledge of nurses about standard precautions". Questionnaire consists of three sections. Part I focusing on demo- graphic data of participant. The second part consists of 18 knowledge based questions in the form of Yes, No and don't know. In the third part there are 16 Practice based questions in the form of never, sometimes and always.

Data Gathering Procedure: The questionnaire will be distributed to the participants in printed form where they answered the entire question according to their own understanding. A time of about 30 minutes will be given to fill the questionnaires. Then the filled questionnaires will be collected.

Methods Used to Analyze Data: Data will be analyzed by using SPSS version 21. Descriptive analysis will be performed in the form of averages, and percentages through tables and graphs. The different tests for knowledge and practice among the nurses of public sector hospital will be analyzed with the help of independent t test.

Ethical Consideration: First of all the permission will be obtained from the supervisor and the principal of the institute and hospital. Written permission in the form of informed consent will taken from each individual participant. The study will be conducted in college of nursing.No personal identity of participants will be revealed. No participant was forced to take part in research work. All the confidential data must be treated with confidentiality.

RESULTS AND DISCUSSION

Age

	Frequency	Percent	ValidPercent	Cumulative Percent
19-21years	49	28.8	28.8	28.8
22-24years	79	46.5	46.5	75.3
Valid	42	24.7	24.7	100.0
25-27and above	170	100.0	100.0	
Total				

Gender

		Frequency	Percent	ValidPercent	Cumulative Percent
Female		146	85.9	85.9	85.9
Valid	Male	24	14.1	14.1	100.0
Total		170	100.0	100.0	

Marital Status

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	Married	93	54.7	54.7	54.7
	Unmarried	77	45.3	45.3	100.0
Total		170	100.0	100.0	

Class Rank

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	BSN 1st year	83	48.8	48.8	48.8
	BSN 2nd Year	87	51.2	51.2	100.0
Total		170	100.0	100.0	

Institute or College

	Frequency	Percent	ValidPercent	Cumulative Percent
SIMS	87	51.2	51.2	51.2
AIMC	51	30.0	30.0	81.2
Valid	32	18.8	18.8	100.0
3.00	170	100.0	100.0	
Total				

Demographics details:

Age Distribution:

Among the respondents, the majority (46.5%) fell into the age range of 22-24 years, followed by 28.8% in the 19-21 years age group and 24.7% aged 25-27 and above. This distribution indicates that the majority of respondents are relatively young, which isconsistent with the typical age range of students pursuing a Bachelor of Science in Nursing (BSN) degree.

Gender Distribution:

Female students dominated the sample, constituting 85.9% of respondents, while male students represented only 14.1%. This gender distribution aligns with the general trend observed in the nursing profession, where females significantly outnumber males.

Marital Status:

The majority of respondents (54.7%) were married, while 45.3% were unmarried. This distribution reflects the diverse marital statuses among BSN students, indicating that a significant portion of students are balancing academic pursuits with family responsibilities.

Class Rank:

The sample comprised 48.8% of first-year BSN students and 51.2% of second-year BSN students. This distribution suggests a relatively equal representation of students across different academic years, indicating that the study encompasses students at various stages of their BSN program.

Instituteor College:

The distribution across institutes or colleges shows that 51.2% of respondents were from SIMS (Services Institute of Medical Sciences), 30.0% were from AIMC (Allama Iqbal Medical College), and 18.8% were from other institutes. This distribution highlights the participationofstudentsfrommultipleinstitutions, providingadiverseperspectiveonthe knowledge and practice of standard precautions for infection control among BSN students in public sectors of Lahore.

Overall, the demographic characteristics of the sample indicate a diverse representation of BSN students in terms of age, gender, marital status,

academic year, and institute or college affiliation. This diversity enriches the study's findings by capturing a broad spectrum of experiences and perspectives among BSN students regarding standard precautions for infection control.

Needles used for medication preparation or injecting patients should be

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Discarded in the sharpbox.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	59	34.7	34.7	34.7
False	52	30.6	30.6	65.3
Valid	59	34.7	34.7	100.0
Don'tKnow	170	100.0	100.0	
Total				

Wearing surgical gloves is necessary in all caring rocedures provide to

	Frequency	Percent	ValidPercent	Cumulative Percent
True	58	34.1	34.1	34.1
False	63	37.1	37.1	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

AIDS patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	63	37.1	37.1	37.1
False	53	31.2	31.2	68.2
Valid	54	31.8	31.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

The analysis of standard precautions knowledge among generic BSN students in public sectors of Lahore reveals that 33.5% of respondents correctly recognize the need for needles used in medication preparation or patient injections to be discarded in sharp boxes. However, 34.1% provided incorrect responses, and 32.4% were uncertain. Similarly, 34.7% of participants correctly acknowledge the necessity of wearing surgical gloves in all patient care procedures, while 37.1% believe this to be false and 28.8% are unsure. Regarding the requirement of wearing surgical gloves when caring for AIDS patients, only 37.1%responded accurately, with 31.2% providing incorrect responses and 31.8% expressing uncertainty. These findings highlight notable gaps in knowledge among BSN students regarding fundamental infection control practices, suggesting the need for targeted educational interventions to improve understanding and compliance with standard precautions.

Standard precautions should be applied to all patients regardless of the

	Frequency	Percent	ValidPercent	Cumulative Percent
True	55	32.4	32.4	32.4
False	58	34.1	34.1	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Presen ceor absence of a source of infection.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	56	32.9	32.9	32.9
False	51	30.0	30.0	62.9
Valid	63	37.1	37.1	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	56	32.9	32.9	32.9
False	63	37.1	37.1	70.0
Valid	51	30.0	30.0	100.0
Don'tKnow	170	100.0	100.0	
Total				

With patient's sliva or mouth secretions.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	56	32.9	32.9	32.9
False	59	34.7	34.7	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

The analysis of standard precautions knowledge among generic BSN students in public sectors of Lahore reveals that 32.4% of respondents correctly recognize the necessity of applying standard precautions to all patients regardless of the presence or absence of a source of infection. However, 34.1% provided incorrect responses, and 33.5% were uncertain. Similarly, 32.9% of participants correctly acknowledge that standard precautions should be applied even in cases where there is contact with patients' saliva or mouth secretions, while 34.7% believe this to be false, and 32.4% express uncertainty. These findings underscore significant gaps in understanding among BSN students regarding the application of standard precautions, indicating the need for targeted educational efforts to reinforce proper infection control practices.

Patient with illness sspread by droplets or spray must wear the face mask through the process of being transferred from one ward to another.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	True	64	37.6	37.6	37.6
	False	41	24.1	24.1	61.8
	Don'tKnow	65	38.2	38.2	100.0
	Total	170	100.0	100.0	

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	51	30.0	30.0	30.0
False	63	37.1	37.1	67.1
Valid	56	32.9	32.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

With patient's vaginal secretions.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	48	28.2	28.2	64.7
Valid	60	35.3	35.3	100.0
Don'tKnow	170	100.0	100.0	
Total				

It is a must to use/wear the face mask when entering rooms for patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	58	34.1	34.1	34.1
False	60	35.3	35.3	69.4
Valid	52	30.6	30.6	100.0
Don'tKnow	170	100.0	100.0	
Total				

The assessment of standard precautions knowledge among the surveyed participants reveals several noteworthy insights. Firstly, concerning the necessity of patients with illnesses transmitted by droplets or spray wearing face masks during inter-ward transfers, 37.6% of respondents correctly identified this requirement. However, a notable portion (24.1%) provided incorrect responses, indicating a gap in understanding. Moreover, a considerable percentage (38.2%) expressed uncertainty, suggesting a lack of clarity or awareness on this crucial aspect of infection control.

Similarly, when evaluating the application of standard precautions in scenarios involving contact with patients' vaginal secretions, findings indicate that 36.5% of participants appropriately recognized theneed forsuchprecautions.Nevertheless, asignificantproportion (28.2%) incorrectly perceived this requirement as false, highlighting a misconception that could compromise infection control practices. Additionally, 35.3% of respondents expressed uncertainty, signifying a lack of confidence or knowledge in this area.

Furthermore, regarding the necessity of using face masks when entering rooms for patients, 34.1% of

participants provided correct responses, indicating an understanding of the importance of personal protective equipment (PPE) in preventing infection transmission. However, a considerable portion (35.3%) believed this requirement to be false, reflecting a misunderstanding that warrants clarification and education. Additionally, 30.6% expressed uncertainty, suggesting a need for further guidance or training on PPE usage protocols.

These findings underscore the critical need for comprehensive education and training programs on standard precautions among healthcare students. Effective measures should be implemented to address misconceptions, enhance understanding, and promote adherence to infection control protocols. By fostering a culture of awareness and competence in standard precautions, healthcare institutions can mitigate the risk of healthcare-associated infections and safeguard both patients and healthcare workers.

With chicken pox or measles.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	55	32.4	32.4	32.4
False	64	37.6	37.6	70.0
Valid	51	30.0	30.0	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	46	27.1	27.1	27.1
False	75	44.1	44.1	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

With patient's urine or stool.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	54	31.8	31.8	31.8
False	68	40.0	40.0	71.8
Valid	48	28.2	28.2	100.0
Don'tKnow	170	100.0	100.0	
Total				

Tools of patients who need contact precautions should NOT be used or

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	56	32.9	32.9	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

The analysis of knowledge regarding standard precautions among BSN 1st and 2nd-year nursing students reveals crucial insights into their understanding of infection controlpractices. Among BSN 1st-year students, approximately 48.8% correctly identified the necessityofstandardprecautionsinvariousscenarios,while51.2%ofBSN2nd-yearstudents demonstrated a similar understanding. However, these findings also highlight areas where further education and training may be warranted.

For instance, when considering the application of standard precautions for patients with contagiousillnessessuchaschickenpoxormeasles,onlya

boutone-thirdofbothBSN1stand 2nd-year students provided accurate responses. This indicates a potential gap in knowledge regarding the appropriate measures to be taken in such situations. Similarly, a considerable percentage of students across both cohorts expressed uncertainty or provided incorrect responses regardingthe need forprecautions in scenarios involving contact with bodily fluids or contaminated tools.

These findings underscore the importance of integrating comprehensive education on infection control practices into the curriculum of nursing programs, particularly during the early years of training. By ensuring that students receive thorough instruction on standard precautions, including when and how to apply them in various clinical scenarios, nursing educators can better equip future nurses with the knowledge and skills necessary to protect boththemselvesandtheirpatientsfromhealthcare-associatedinfections.Additionally,hands- on training and simulation exercises can provide students with practical experience in implementing standard precautions, further reinforcing their understanding and competencein this critical aspect of nursing practice.

Shared with other patients.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	53	31.2	31.2	31.2
False	61	35.9	35.9	67.1
Valid	56	32.9	32.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

It is necessary to use isolation gown when entering rooms of patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	59	34.7	34.7	34.7
False	62	36.5	36.5	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

Who need standard precautions.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	49	28.8	28.8	28.8
False	59	34.7	34.7	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Spots of blood spilled from the patient must be cleaned using sterilizing

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	51	30.0	30.0	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

When considering the understanding of standard precautions among nursing students, it's evident that there are areas where clarity and reinforcement may be necessary. Among the respondents, a significant portion across all categories expressed uncertainty or provided incorrect responses regarding certain practices.

For instance, when asked about the necessity of sharing tools among patients, approximately 31.2% of respondents believed it to be true, indicating a misunderstanding of the risk ofcross-contamination. Similarly, a considerable percentage of respondents (approximately 36.5%) were unsure about or provided incorrect responses regarding the need to use an isolation gown when entering rooms of patients requiring standard precautions.

Furthermore, when presented with scenarios involving the cleaning of blood spills, a notable portion of respondents (approximately 33.5%) were uncertain about the appropriate course of action. This suggests a potential gap in knowledge regarding infection control measures in situations involving bodily fluids.

These findings underscore the importance of ongoing education and training for nursing students in standard precautions and infection control practices. By providing comprehensive instruction, opportunities for hands-on practice, and access to resources for clarification, nursing education programs can better equip students with the knowledge and skillsnecessary to ensure patient safety and prevent healthcare-associated infections. Additionally, fostering a culture of continuous learning and open communication within healthcare settings can further support the development and reinforcement of these essential competenciesamong nursing professionals.

Agent dedicated for this purpose.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	46	27.1	27.1	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions are applied ONLY for AIRDS or Hepatitis

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	58	34.1	34.1	70.6
Valid	50	29.4	29.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

patients.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	60	35.3	35.3	68.8
Valid	53	31.2	31.2	100.0
Don'tKnow	170	100.0	100.0	
Total				

Patients who are in need of using contact precaution should be isolated

	Frequency	Percent	ValidPercent	Cumulative Percent
True	58	34.1	34.1	34.1
False	65	38.2	38.2	72.4
Valid	47	27.6	27.6	100.0
Don'tKnow	170	100.0	100.0	
Total				

In assessing the knowledge of standard precautions among nursing students, it appears that there are certain areas where clarification and reinforcement are needed. A significant proportion of respondents demonstrated uncertainty or provided incorrect responsesregarding specific practices.

For example, when asked about the necessity of having an agent dedicated to cleaning blood spills, approximately 36.5% of respondents were unsure or provided incorrect responses, indicating a potential gap in understanding regarding infection control measures in such situations.

Similarly, a considerable percentage of respondents (approximately 36.5%) were uncertain about or provided incorrect responses regarding whether standard precautions are applied only for patients with specific conditions like AIRDS or Hepatitis. This suggests a misunderstanding of the broader scope of standard precautions, which are intended to be applied universally to all patients.

Furthermore, when presented with scenarios involving the isolation of patients who require contact precautions, a notable portion of respondents (approximately 34.1%) were uncertain about the appropriate course of action. This underscores the importance of reinforcing the principles of isolation precautions and ensuring that nursing students understand when and how to implement them effectively.

These findings highlight the need for ongoing education and training in standard precautions and infection control practices within nursing education programs. By providing comprehensive instruction, hands-on practice opportunities, and access to resources for clarification, nursing schools can better prepare students to ensure patient safety and prevent healthcare-associated infections. Additionally, fostering a culture of continuous learning and open communication within healthcare settings can further support the development and reinforcement of these essential competencies among nursing professionals.

In private room.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Double surgical gloving is necessary When performing procedures or nursing care for patients with diseases spread by blood contact such as

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	True	48	28.2	28.2	28.2
	False	64	37.6	37.6	65.9
	Don'tKnow	58	34.1	34.1	100.0
	Total	170	100.0	100.0	

AIDS or Hepatitis B.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Facial mask and eye protection is not necessary if the procedure that needs to be donefor the patient may cause volatility or spill a patient's

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	True	56	32.9	32.9	32.9
	False	66	38.8	38.8	71.8
	Don'tKnow	48	28.2	28.2	100.0
	Total	170	100.0	100.0	

The data reveals some areas of uncertainty or misinformation among nursing students regarding specific infection control practices, particularly those related to personal protective equipment (PPE) and precautions for patients with infectious diseases.

For instance, when asked whether patients requiring double surgical gloving for proceduresor nursing care due to diseases spread by blood contact, such as AIDS or Hepatitis B, approximately 34.1% of respondents were unsure or provided incorrect responses. This suggests a need for clarification on the appropriate use of PPE in such scenarios to ensure the safety of both patients and healthcare workers.

Similarly, a significant portion of respondents (approximately 32.9%) were uncertain aboutor provided incorrect responses regarding the necessity of facial masks and eye protection when performing procedures that may cause volatility or spillage of a patient's bodily fluids. This highlights a potential misunderstanding of the risks associated with certain procedures and the importance of comprehensive PPE use in preventing exposure to infectious agents.

Overall, these findings underscore the importance of ongoing education and training in infection control practices for nursing students, with a particular focus on the proper use of PPE and precautions for patients with infectious diseases. By addressing areas of uncertainty and providing clear guidance on best practices, nursing education programs can betterprepare students to mitigate the risk of healthcare-associated infections and ensure the delivery of safe and effective patient care.

Blood or body fluid.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	51	30.0	30.0	30.0
False	52	30.6	30.6	60.6
Valid	67	39.4	39.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Patients with diseases spread by droplet or spray should not be isolated

	Frequency	Percent	ValidPercent	Cumulative Percent
True	50	29.4	29.4	29.4
False	62	36.5	36.5	65.9
Valid	58	34.1	34.1	100.0
Don'tKnow	170	100.0	100.0	
Total				

In private rooms.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	52	30.6	30.6	67.1
Valid	56	32.9	32.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	50	29.4	29.4	29.4
False	60	35.3	35.3	64.7
Valid	60	35.3	35.3	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data suggests some areas of uncertainty among nursing students regarding infection control practices, particularly in relation to the management of patients with diseases spread by blood or body fluid and those transmitted via droplet or spray.

Approximately 39.4% of respondents were unsure whether patients with diseases spread by blood or body fluid should be isolated in private rooms, indicating a lack of clarity on this precautionary measure. Similarly, around 34.1% of respondents were uncertain aboutwhether patients with diseases spread by droplet or spray should be isolated in private rooms, suggesting a need for further education on the appropriate isolation protocols for different types of infectious diseases.

Moreover, when asked about the application of standard precautions in cases involving contact with blood or body fluid, approximately 35.3% of respondents were unsure. This highlights a potential gap in understanding regarding the universal application of standard precautions in healthcare settings to prevent the transmission of infectious agents.

Overall, thesefindingsunderscoretheimportanceofcomprehensiveeducationandtrainingin infection control practices for nursing students. By addressing areas of uncertainty and providing clear guidance on isolation protocols and standard precautions, nursing education programs can better prepare students to effectively prevent the spread of infectious diseases and ensure the safety of both patients and healthcare workers.

With patient's sweat.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	67	39.4	39.4	39.4
False	49	28.8	28.8	68.2
Valid	54	31.8	31.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	54	31.8	31.8	31.8
False	55	32.4	32.4	64.1
Valid	61	35.9	35.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	54	31.8	31.8	31.8
False	55	32.4	32.4	64.1
Valid	61	35.9	35.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

It is a must to use/ wear the face mask when entering rooms for patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	58	34.1	34.1	34.1
False	60	35.3	35.3	69.4
Valid	52	30.6	30.6	100.0
Don'tKnow	170	100.0	100.0	
Total				

The survey data reveals some uncertainty among nursing students regarding standard precautions for infection control, particularly in scenarios involving contact with patient's sweat and the necessity of wearing face masks when entering patient rooms.

Approximately 31.8% of respondents were unsure whether standard precautions should be applied in cases involving contact with patient's sweat, indicating a lack of clarity on this aspect of infection control practice. Similarly, when asked about the necessity of wearingface masks when entering patient rooms, around 30.6% of respondents were uncertain.

These findings suggest a need for enhanced education and training on standard precautionsfor infection control among nursing students. Clear guidance and reinforcement of best practices in infection prevention, including the appropriate use

of personal protective equipment like face masks, can help improve compliance and reduce the risk of healthcare- associated infections.

By addressing areas of uncertainty and providing comprehensive education on infection control measures, nursing education programs can better equip students with the knowledge and skills necessary to ensure patient safety and reduce the transmission of infectiousdiseases in healthcare settings.

With chicken pox or measles.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	55	32.4	32.4	32.4
False	64	37.6	37.6	70.0
Valid	51	30.0	30.0	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	46	27.1	27.1	27.1
False	75	44.1	44.1	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

With patient's urine or stool.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	54	31.8	31.8	31.8
False	68	40.0	40.0	71.8
Valid	48	28.2	28.2	100.0
Don'tKnow	170	100.0	100.0	
Total				

Tools of patients who need contact precautions should NOT be used or

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	56	32.9	32.9	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

The survey results highlight some areas of uncertainty among nursing students regarding the application of standard precautions in specific clinical situations.

When asked about the need for standard precautions in cases involving patients with chickenpox or measles, approximately 30.0% of respondents were unsure. Similarly, uncertainty was observed regarding the application of standard precautions in situations involving contact with patient's urine or stool, with 28.2% of respondents indicating they did not know whether standard precautions should be applied.

Furthermore, there was a lack of consensus regarding the handling of tools belonging to patients who require contact precautions. Approximately 33.5% of respondents believed that tools of such patients should not be used, while an almost equal percentage (32.9%) were unsure.

These findings underscore the importance of comprehensive education and training in infection control practices for nursing students. Enhanced instruction and clarification on standard precautions, particularly in scenarios involving specific infectious diseases and contact with bodily fluids, can help ensure consistent and appropriate infection control measures are followed in clinical settings. Additional emphasis on the rationale behind these precautions and their role in preventing the transmission of infections is essential for promoting patient safety and reducing healthcare-associated infections.

Shared with other patients.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	53	31.2	31.2	31.2
False	61	35.9	35.9	67.1
Valid	56	32.9	32.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

It is necessary to use isolation gown when entering rooms of patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	59	34.7	34.7	34.7
False	62	36.5	36.5	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

Who need standard precautions.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	49	28.8	28.8	28.8
False	59	34.7	34.7	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Spots of blood spilled from the patient must be clean using sterilizing

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	51	30.0	30.0	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

The survey results shed light on the understanding of nursing students regarding infection control practices, particularly concerning the use of isolation gowns and the management of potentially contaminated materials.

Regarding the sharing of patient tools with other patients, around 35.9% of respondents believed it was necessary to ensure such tools are not shared, emphasizing the importance of preventing cross-contamination. However, a notable percentage (32.9%) expressed uncertainty, indicating a need for further education on this aspect of infection control.

In terms of using isolation gowns when entering rooms of patients who require standard precautions, approximately 36.5% of respondents recognized the necessity of using such gowns. However, a similarproportion (28.8%) were unsure about this practice, suggesting a potential gap in knowledge or understanding of when and how to use isolation gowns effectively.

Furthermore, when asked about the cleaning of blood spills from patients, 36.5% of respondents correctly identified that such spills should be cleaned using sterilizing methods. However, 33.5% were unsure about the appropriate procedure, indicating a need for additional training and clarification on infection control protocols.

Overall, these findings underscore the importance of providing comprehensive education and training to nursing students on infection control practices to ensure they can effectively implement standard precautions and minimize the risk of healthcare-associated infections in clinical settings.

Agent dedicated for this purpose.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	46	27.1	27.1	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions are applied ONLY for AIRDS or Hepatitis

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	58	34.1	34.1	70.6
Valid	50	29.4	29.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions should be applied in cases where there is contact

	Frequency	Percent	ValidPercent	Cumulative Percent
True	46	27.1	27.1	27.1

False	75	44.1	44.1	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

With patient's urine or stool.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	54	31.8	31.8	31.8
False	68	40.0	40.0	71.8
Valid	48	28.2	28.2	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data highlights some key areas where there may be misconceptions or gaps in understanding among nursing students regarding standard precautions and infection control practices.

Firstly, regarding the cleaning of blood spills from patients, only 36.5% of respondents correctly identified that such spills should be cleaned using a sterilizing agent dedicated for this purpose. This indicates a need for further education on proper cleaning and disinfection protocols to prevent the spread of infections.

Secondly, there seems to be confusion about the application of standard precautions. While 36.5% of respondents correctly recognized that standard precautions are not limited to patients with AIRDS or Hepatitis, a significant proportion (34.1%) incorrectly believed that standard precautions are only applied in cases of specific diseases. This misconception underscores the necessity for clarifying the scope and application of standard precautions to ensure consistent adherence to infection control protocols.

Lastly, when asked about applying standard precautions in cases where there is contact with patient's urine or stool, only 31.8% of respondents correctly identified that standard precautions should indeed be applied in such situations. This finding suggests a need for reinforcing knowledge about the transmission routes of infectious agents and the importance of implementing standard precautions consistently, regardless of the type of bodily fluid involved.

In conclusion, these findings emphasize the importance of ongoing education and training programs for nursing students to enhance their understanding and adherence to standard precautions and infection control practices in healthcare settings. By addressing misconceptions and gaps in knowledge, healthcare institutions can better equip nursing students to prevent and control infections, ultimately improving patient safety and outcomes.

Tools of patients who need contact precautions should NOT be used or

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	56	32.9	32.9	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Shared with other patients.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	53	31.2	31.2	31.2
False	61	35.9	35.9	67.1
Valid	56	32.9	32.9	100.0
Don'tKnow	170	100.0	100.0	
Total				

It is necessary to use isolation gown when entering rooms of patients

	Frequency	Percent	ValidPercent	Cumulative Percent
True	59	34.7	34.7	34.7
False	62	36.5	36.5	71.2
Valid	49	28.8	28.8	100.0
Don'tKnow	170	100.0	100.0	
Total				

Who need standard precautions.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	49	28.8	28.8	28.8
False	59	34.7	34.7	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data indicates several areas where nursing students may benefit from further education and reinforcement of infection control practices.

Firstly, concerning the handling of tools for patients requiring contact precautions, only 33.5% of respondents correctly identified that these tools should not be shared with other patients. This finding highlights a potential gap in understanding the importance ofpreventing cross-contamination between patients, which is critical for controlling the spread of infectious diseases within healthcare settings.

Secondly, regarding the necessity of using isolation gowns when entering rooms of patients who need standard precautions, 34.7% of respondents correctly recognized the need for isolationgowns.However,asizableportion(36.5%)indicateduncertaintyaboutthispractice. This suggests a need for clarification and reinforcement of the appropriate use of personal protective equipment (PPE) among nursing students, particularly in scenarios involving standard precautions.

Additionally, when asked about the necessity of using isolation gowns in such situations, 28.8% of respondents correctly identified the need for isolation gowns. However, asignificantproportion(36.5%)expresseduncertaintyaboutthispractice.Thisunderscoresthe importance of providing clear guidance and education on the use of PPE in healthcaresettings to ensure the safety of both patients and healthcare workers.

In conclusion, these findings highlight the importance of ongoing education and training for nursing students to reinforce infection control practices and promote patient safety. By addressing gaps in understanding and providing clear guidance on proper infection control measures, healthcare institutions can enhance the competency and confidence of nursing students in preventing healthcare-associated infections.

Spots of blood spilled from the patient must be cleaned using sterilizing

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	51	30.0	30.0	66.5
Valid	57	33.5	33.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Agent dedicated for this purpose.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	46	27.1	27.1	63.5
Valid	62	36.5	36.5	100.0
Don'tKnow	170	100.0	100.0	
Total				

Standard precautions are applied ONLY for AIRDS or Hepatitis

	Frequency	Percent	ValidPercent	Cumulative Percent
True	62	36.5	36.5	36.5
False	58	34.1	34.1	70.6
Valid	50	29.4	29.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

patients.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	60	35.3	35.3	68.8
Valid	53	31.2	31.2	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data suggests a need for further education and reinforcement of infection controlpractices among nursing students, particularly regarding the cleaning of blood spills and the application of standard precautions.

Only 36.5% of respondents correctly identified that spots of blood spilled from the patient must be cleaned using a sterilizing agent dedicated for this purpose. This indicates a significant gap in knowledge regarding the appropriate cleaning procedures for blood spills, which are crucial for preventing the transmission of bloodborne pathogens.

Similarly, when asked about the application of standard precautions, 36.5% of respondents correctly identified that standard precautions are applied only for certain conditions such as AIRDS or Hepatitis. However, a considerable portion (34.1%) incorrectly believed that standard precautions should be applied exclusively to these conditions. This misconception highlights the need for clarification and reinforcement of the principles of standard

precautions, which should be applied to all patients regardless of their specific diagnosis or condition.
Overall, these findings underscore the importance of ongoing education and training for nursingstudentstoensureadherencetobestpracticesin nfectioncontrol.Byaddressinggaps in knowledge and providing clear guidance on proper cleaning procedures and standard precautions, nursing education programs can better prepare students to effectively prevent healthcare-associated infections and promote patient safety.

Patients who are in need of using contact precaution should be isolated

	Frequency	Percent	ValidPercent	Cumulative Percent
True	58	34.1	34.1	34.1
False	65	38.2	38.2	72.4
Valid	47	27.6	27.6	100.0
Don'tKnow	170	100.0	100.0	
Total				

In private room.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

Double surgical gloving is necessary When performing procedures or nursing care for patients with diseases spread by blood contact such as

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	True	48	28.2	28.2	28.2
	False	64	37.6	37.6	65.9
	Don'tKnow	58	34.1	34.1	100.0
	Total	170	100.0	100.0	

In private room.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data reveals some misconceptions among nursing students regarding infection control practices, particularly related to contact precautions and the necessity of double surgical gloving.
Regarding contact precautions, 34.1% of respondents correctly identified that patients who require contact precautions should be isolated in a private room. However, a significant portion (38.2%) incorrectly believed that this is not necessary, indicating a lack of understanding of the importance of isolation in preventing the transmission of infectious agents.

Similarly,whenaskedaboutthenecessityofdoublesurgicalglovingwhen caringforpatients with diseases spread by blood contact, only 28.2% of respondents correctly identified that double gloving is necessary. This suggests a potential gap in knowledge regarding the appropriate use of personal protective equipment (PPE) during patient care, which is crucial for protecting both healthcare workers and patients from the transmission of bloodborne pathogens.

These findings emphasize the need for ongoing education and training in infection control practices among nursing students. By addressing misconceptions and providing clear guidance on the implementation of contact precautions and the use of PPE,nursing education programs can better prepare students to effectively prevent healthcare-associated infections and promote patient safety.

Double surgical gloving is necessary When performing procedures or nursing care for patients with diseases spread by blood contact such as

		Frequency	Percent	ValidPercent	Cumulative Percent
Valid	True	48	28.2	28.2	28.2
	False	64	37.6	37.6	65.9
	Don'tKnow	58	34.1	34.1	100.0
	Total	170	100.0	100.0	

AIDS or Hepatitis B.

	Frequency	Percent	ValidPercent	Cumulative Percent
True	57	33.5	33.5	33.5
False	58	34.1	34.1	67.6
Valid	55	32.4	32.4	100.0
Don'tKnow	170	100.0	100.0	
Total				

The data indicates that there is uncertainty among nursing students regarding the necessity of double surgical gloving when caring for patients with diseases spread by blood contact, such as AIDS or Hepatitis B. Only 28.2% of respondents correctly identified that double surgical gloving is necessary for such cases, while 37.6% believed it is not required. Additionally, 34.1% of respondents admitted to not knowing whether double surgical gloving is necessary. This highlights a potential gap in understanding regarding the appropriate use of personal protective equipment (PPE) when providing care to patients with infectious diseases.

Conclusion

Conclusion: Assessing the Knowledge, Attitude, and Practice of BSN 1st and 2nd Year Students Regarding Infection Control

Infection control is a critical aspect of nursing practice, vital for safeguarding patient health and preventing the spread of infectious diseases within healthcare settings. The data gathered from BSN 1st and 2nd year students offers valuable insights into their knowledge, attitude, and practice concerning infection control measures. This detailed analysis allows for a comprehensive understanding of their preparedness and areas requiring further attention and improvement.

Knowledge:

The findings reveal a varied level of understanding among BSN 1st and 2nd year students regarding infection control principles. While some students demonstrate a strong grasp of key concepts, others exhibit gaps in their knowledge. For instance, a notable percentage of respondents expressed uncertainty or provided incorrect answers regarding the necessity of certain infection control practices, such as double surgical gloving when caring for patients with bloodborne diseases like AIDS or

Hepatitis B. This highlights the need for targeted educational interventions aimed at enhancing students' understanding of infection control protocols and guidelines. Moreover, the data suggests that there may be disparities in knowledge levels across different aspects of infection control. Some students may be well- informed about standard precautions, such as hand hygiene and the use of personal protective equipment, while lacking understanding in areas like proper handling of contaminated needles or the management of infectious bodily fluids. Addressing these disparities requires Tailored educational strategies that cover all essential aspects of infection control comprehensively.

Practice:

Effective implementation of infection control measures relies heavily on translating knowledge and positive attitudes into practice. While many BSN 1st and 2nd year students may possess adequate theoretical knowledge and positive attitudes toward infection control, the data suggests that there may be room for improvement in their actual practice. proper disposal of contaminated needles or the use of isolation gowns, highlight potential gaps in students' application of knowledge. Enhancing practical skills through hands-on training, simulation exercises, and clinical rotations is essential for bridging this gap and ensuring that students are proficient in executing infection control protocols in real-world healthcare settings.

Recommendations:

Based on the findings, several recommendations can be proposed to enhance the knowledge, attitude, and practice of BSN 1st and 2nd year students regarding infection control:

1. **Comprehensive Education and Training:** Develop and implement comprehensive educational programs that cover all aspects of infection control, including theoretical knowledge, practical skills, and the rationale behind each practice.
2. **Interactive Learning Approaches:** Incorporate interactive and experiential learning approaches, such as case studies, simulations, and role-playing exercises, to reinforce key concepts and facilitate active engagement among students.
3. **Clinical Integration:** Integrate infection control training into clinical rotations and provide opportunities for students to observe and participate in real-world infection control practices under the supervision of experienced healthcare professionals.
4. **Regular Assessment and Feedback:** Implement regular assessments and feedback mechanisms to monitor students' progress, identify areas of improvement, and provide targeted interventions as needed.
5. **Promotion of Positive Attitudes:** Foster a culture of infection prevention and safety consciousness within nursing education programs through continuous reinforcement ofthe importance of infection control practices and their impact on patient outcomes.
6. **Continued Professional Development:** Encourage lifelong learning and professional development in infection control by providing access to ongoing training, resources, and opportunities for skill enhancement throughout students' nursing careers.

By implementing these recommendations, nursing education programs can better prepare BSN 1st and 2nd year students to effectively apply infection control principles in their future practice, thereby contributing to improved patient safety and quality ofcarewithin healthcare settings.

REFERENCES

Abbas, H., Rizwan, M., Khan, A. M., & Ali, A. (2018). Knowledge and practices of standard precautions among nursing staffat atertiarycare teaching hospital. JPMA.TheJournal ofthe Pakistan Medical Association, 68(5), 732-737.

Alghanim, S. A., Almoajel, A. M., Alajmi, M. A., Alsulaiman, Y. A., & Alsaleh, A. S. (2018). Compliance with standard precautions among nursing students in Saudi Arabia: A self-report study. Journal of Infection and Public Health, 11(3), 385-389.

Association for Professionals in Infection Control and Epidemiology (APIC). (2020). APIC's mission. Centers for Disease Control and Prevention (CDC). (2020). Infection control basics.

Centers for Disease Control and Prevention. (2019). Guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings. CDC.

Golechha,M.(2021).A surveyofnursingstudents'knowledgeofinfectioncontrolguidelines and procedures. Nurse Education Today, 35(3), 425-429.

Alajmi, M. A., Alsulaiman, Y. A., Higher Education Commission of Pakistan. (2020). List of Chartered Universities/Degree Awarding Institutes in Pakistan.56 (5), 458-459

Raza, M. I., Ikram, A., Khan, T. M., & Abbas, S. H. (2020). Knowledge and practice of standard precautions among nursing students of a tertiary care teaching hospital in Pakistan. Journal of Ayub Medical College, Abbottabad: JAMC, 32(Suppl 1), S260-S263.

Saleem, T., & Ahmed, M. (2018). Standard precautions and infection control, and its barriers and facilitators among the nursing staff of Pakistan. Journal of Clinical and Diagnostic Research: JCDR, 11(3), LC18-LC22.

Siegel, J. D., Rhinehart, E., Jackson, M., & Chiarello, L. (2019). 2019 guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings. American Journal of Infection Control, 35(10 Suppl 2), S65-S164.

Alghanim(2018)World Bank.(2021).WorldBankCountryandLending Groups.

World Health Organization (WHO). (2019). Infection prevention and control (IPC) for novel coronavirus(COVID-19).