

**“ FORTIFYING NURSING STAFF PERFORMANCE AT
CIMS-KARKINOS CANCER CENTRE BHOPAL : A DUAL
ASSESSMENT AND COMPREHENSIVE TRAINING
PROGRAM FOR PERFORMANCE OPTIMIZATION.”**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the

degree of Master of Business Administration

(MBA)

in

Hospital and Health Management

by

Meshwa Pandey

Under the Supervision and Guidance of

Dr Piyusha Majumdar

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “ Fortifying Nursing Staff Performance At Cims-Karkinos Cancer Centre Bhopal : A Dual Assessment And Comprehensive Training Program For Performance Optimization.” to assess the knowledge gaps among nursing staff and implement targeted training programs to bridge these gaps and improve overall performance , is the official documentation of my original research paper. I certify that this text has not been presented to any other institution for the purpose of awarding any degree or diploma, and that information from published or unpublished works of others has been appropriately credited in the text.

Name of Student: Meshwa Pandey

Date:

CERTIFICATE OF COMPLETION-



Date: 31st May 2023

Internship Completion Certificate

To Whom It May Concern

This is to certify that Dr .Meshwa Ashok Pandey, (KHPL-I-0173) has worked as “Intern” with Karkinos Healthcare Private Limited and has successfully completed the internship under the guidance of Pankaj D. Vaishampayan.

Internship Duration: 15th March 2023 to 31st May 2023.

We wish all the best.

For Karkinos Healthcare Pvt Ltd

A handwritten signature in black ink, appearing to read "Srikanth Rapaka", written over a horizontal line.

Srikanth Rapaka
Director - Human Resources

CERTIFICATE

This is to certify that dissertation titled titled “Fortifying Nursing Staff Performance At Cims-Karkinos Cancer Centre Bhopal : A Dual Assessment And Comprehensive Training Program For Performance Optimization.” to assess the knowledge gaps among nursing staff and implement targeted training programs to bridge these gaps and improve overall performance is a record of Meshwa Pandey’s research work in which she partially completed the requirements for attaining the degree. of MBA (Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide- Dr Piyusha Majumdar
IIHMR University, Jaipur

School Dean –
Dr (Col) Mahender Kumar
IIHMR University, Jaipur

Date-

Date-

ABSTRACT-

The purpose of this study was to evaluate the effectiveness of a training program in improving nurses' knowledge and competence in specific areas of nursing practise. The study used a pre- and post- training design and included a sample of twenty nurses from different departments and experience levels. The training program addressed critical topics such as: Infection Control Practices ,Ostomy Care, Emergency Codes, Vascular access care , Spillage Management , Patient Fall Prevention , Sample Collection methods , Quality Management in healthcare

The study found significant improvements in the participants' knowledge and understanding post-training. The average scores of the post-trained questionnaire were significantly higher than the pre-trained scores, suggesting that the training program had a positive effect on the knowledge and competence of the nurses. The analysis of the results included mean values and standard deviations, as well as a t-test for statistical significance. When compared to previous research studies, targeted training interventions have been shown to positively impact nursing practice .The results of this study were in line with previous literature, highlighting the importance of continuing education and training to improve patient outcomes and improve healthcare quality.

However, slight variations in training content, duration, and methodology across studies should be considered when interpreting the outcomes. The study has some drawbacks, such as a limited sample size that would limit the generalizability of the findings. The reliance on self-reported data through questionnaires could have introduced bias and subjective perceptions. Future research could address these limitations by incorporating larger and more diverse samples and incorporating objective measures or observational assessments. Despite the limitations, this study had several strengths. The pre and post-training design enabled a direct comparison of knowledge before and after the training program, providing valuable insights into the immediate impact of the intervention. The comprehensive nature of the training program, addressing specific areas of knowledge and competence, contributed to its effectiveness. Based on the findings, several recommendations can be made. It is crucial to implement regular and ongoing training programs for nurses to ensure their knowledge and skills remain up to date.

Tailored training programs that address specific areas of improvement or challenges faced by nurses should be designed. Collaboration between healthcare institutions, nursing associations, and educational institutions should be encouraged to facilitate knowledge exchange and joint training initiatives. Regular assessments and evaluations of training programs are essential to monitor their effectiveness and identify areas for improvement. In conclusion, this research study demonstrated the positive impact of the training program on nurses' knowledge and competence. Continuous education and training are vital in nursing practice, leading to improved patient outcomes and enhanced quality of care. Investing in training and professional development opportunities for nurses empowers them to deliver high-quality care and stay updated with the evolving healthcare landscape.

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List of Abbreviations

CIMS- Career Institute Of Medical Sciences

ICU- Intensive Care Unit

OT- Operation Theatre

HDU- High Dependency Unit

OPD- Out Patient Department

Acknowledgement

On the completion of my dissertation, I would like to express my gratitude to the people who has been the part of this endeavor in numerous ways. Firstly, I want to express my gratitude to almighty god for keeping me in good health, respects and love to my parents, my brother and my friends for constant encouragement and motivation in my higher studies.

The internship opportunity I had with CIMS – Karkinos Centre Bhopal was a great opportunity to learn and grow as a person.

I am humbled to be able to express my profound gratitude to Mr Pankaj Vaishamapayam (State Head –DCCN Operations Bhopal) CIMS – Karkinos Centre Bhopal who inspired, guided, and helped me to complete my project at their respected organization. I take this moment to recognize his contribution gratefully.

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Sincerely,

Meshwa Pandey

CHAPTER 1: INTRODUCTION

1.1 Background & Rationale

Nurses are essential to providing top-notch patient care in healthcare settings. They are in charge of giving patients direct care, keeping track of their development, giving prescriptions, and guaranteeing their general wellbeing. The knowledge and skills of nursing staff directly impact patient outcomes and overall staff performance. Therefore, it is essential to identify knowledge gaps among nursing staff and implement targeted training programs to address these gaps and optimize their performance. CIMS-Karkinos Cancer Centre in Bhopal is dedicated to providing specialized care to patients with cancer.

As cancer treatment continues to evolve, it is imperative that nursing staff stay updated with the latest knowledge and skills required to deliver effective care. Identifying the specific areas where knowledge gaps exist and designing a comprehensive training program tailored to address these gaps can significantly enhance nursing staff performance and improve patient care outcomes. CIMS Bhopal is a renowned multi-specialty hospital located in Bhopal, dedicated to providing comprehensive medical services to patients across a wide range of specialties. With a mission to contribute to society and make a positive impact on people's lives through high-quality healthcare services, CIMS Bhopal has established itself as a trusted healthcare institution in the region. The hospital boasts a team of experienced and skilled medical professionals, including doctors, surgeons, and nurses, who are committed to delivering the best possible healthcare outcomes. With a focus on general and specialist medical services, including surgical, paediatric, orthopaedic, obstetric, and gynaecological care, CIMS Bhopal caters to the diverse healthcare needs of the local community.

As a 100-bedded facility, CIMS Bhopal provides a comprehensive range of services to ensure the well-being of its patients. The hospital is equipped with state-of-the-art medical equipment and utilizes advanced treatment techniques to deliver accurate diagnoses and effective treatments. This enables the medical team to provide optimal care to patients, ensuring their safety and comfort throughout their healthcare journey. This project aims to further enhance the healthcare services provided by CIMS Bhopal, focusing on improving patient experience, expanding specialized services, and implementing advanced technologies. The objective is to continuously strive for excellence in healthcare delivery and fulfil the hospital's mission of touching lives with humble and high-quality healthcare services. To achieve these goals, the project will involve several key initiatives. Firstly, efforts will be made to enhance the patient experience by improving the overall quality of care, communication, and accessibility. This will involve implementing patient-centred approaches, streamlining processes, and ensuring prompt and efficient service delivery. Additionally, the project will focus on expanding the range of specialist services offered by CIMS Bhopal. This includes strengthening existing departments and introducing new specialties to address the evolving healthcare needs of the community. By expanding the scope of services, the

hospital aims to provide comprehensive and integrated care to patients, covering a wide range of medical conditions and treatments. Through this project, we aim to elevate the position of CIMS – Karkinos Cancer center Bhopal as a leading healthcare institution, known for its commitment to excellence and patient-centric care. By continuously striving for improvement and innovation, the hospital seeks to contribute to the well-being of the community it serves and make a positive impact on the lives of patients. Overall, this project aligns with CIMS- Karkinos Cancer Center Bhopal's mission of providing high-quality healthcare services and emphasizes the hospital's dedication to constantly evolving and meeting the ever-changing healthcare needs of the population. By focusing on patient experience, specialized services, and advanced technologies, it aims to deliver the best possible healthcare outcomes and ensure the highest level of patient satisfaction.

1.2 Problem Statement

Despite the critical role nursing staff play in healthcare settings, there may be instances where their knowledge and skills are not aligned with the evolving needs of patient care. This discrepancy can result in suboptimal patient outcomes and compromised staff performance. Therefore, there is a need to assess the knowledge gaps among nursing staff and implement targeted training programs to bridge these gaps and improve overall performance.

1.3 Context and Importance of the Problem

The context of this study is the CIMS-Karkinos Cancer Centre in Bhopal, where nursing staff are dedicated to providing care to oncology patients. The field of oncology is rapidly evolving, with advancements in treatment modalities, supportive care, and evidence-based practices. It is crucial for nursing staff in this specialized setting to possess up-to-date knowledge and skills to provide safe and effective treatment for cancer patients. The importance of addressing knowledge gaps and enhancing nursing staff performance in this context cannot be overstated. By identifying and addressing these gaps, patient care outcomes can be improved, ensuring that cancer patients receive the highest standard of care. Additionally, enhancing the knowledge and skills of nursing staff can contribute to their professional growth and job satisfaction, creating a positive work environment within the cancer centre.

1.4 Aims & Objectives

Aim- The aim of this study is to find out the impact of a dual assessment and comprehensive training program on nursing staff performance and patient care outcomes at CIMS-Karkinos Cancer Centre in Bhopal. The study aims to assess the knowledge gaps among nursing staff, design targeted training interventions to address these gaps, and evaluate the effectiveness of the training program in improving nursing staff knowledge and skills. Additionally, the study aims to measure the impact of the training program on nursing staff performance and patient care outcomes, and provide recommendations for optimizing nursing staff performance and enhancing overall patient care in healthcare settings

Objectives - The specific objectives of the study are as follows :

- To evaluate the knowledge gaps among nursing staff & identify areas requiring targeted training.
- Develop and put into practice a comprehensive training programme that focuses on the identified knowledge gaps and enhances nursing staff knowledge and skills.
- To assess the suitability of the training programme through a post training knowledge assessment and knowledge retention analysis.
- To provide recommendations for optimizing nursing staff performance and improving patient care outcomes in healthcare settings.
- To explore the factors contributing to knowledge gaps among nursing staff at CIMS-Karkinos Cancer Centre, including educational background, years of experience, and access to professional development opportunities.
- To analyze the effectiveness of different training modalities, such as workshops, seminars, online courses, and hands-on simulations, in improving nursing staff knowledge and skills.

CHAPTER 2- LITERATURE REVIEW

<u>SR. NO</u>	<u>AUTHOR</u>	<u>YEAR</u>	<u>STUDY LOCATION</u>	<u>SAMPLE SIZE</u>	<u>SAMPLING TECHNIQUE</u>	<u>SAILENT FEATURES</u>
1	Durairaj Rajan	2015	Tirunelveli City Tamil Nadu	100	Purposive and judgement sampling	Specific Target Population: The sampling techniques used in this study allowed for the selection of nurses working in private multi-specialty hospitals in Tirunelveli city who had specific qualifications and training experience. This focus ensured that the sample represented the desired population and provided insights into the effectiveness of training among nurses in that particular context.
						2. Purposeful Selection: The sampling techniques employed in this study involved purposeful selection of participants based on predefined criteria. By selecting nurses with specific qualifications and training experience, the researchers aimed to gather data from individuals who were most likely to provide valuable insights into the research topic.
						3. Limited Generalizability: It's important to keep in mind that the results of this study may have limited generalizability beyond the selected sample and the specific context of Tirunelveli city. The sampling techniques used targeted a specific group of nurses, which means the results may not be representative of all nurses in different settings or locations

2	Darell Spurlock	2018	USA	90	Purposive sampling	Constraints of a Single-Group Pre and Post Test Design in Nursing Education Research The single-group pre and post test design is one of the most commonly used design approaches for nursing education research, however, it is important to note that the use of this design alone does not provide sufficient evidence to support intervention effectiveness claims.
						2. Need for Stronger Causality Arguments: The excerpt emphasizes the importance of establishing stronger arguments for causality in nursing education research. It recommends that researchers use study design and methods that support their claims of intervention efficacy.
						3. Building the science of nursing education: The Importance of Studying the Effectiveness of Educational Interventions in Nursing Education. The following is an extract from that paper. It highlights the need for robust research methodologies to enhance the knowledge and understanding of nursing education practices.
3	Abolfazal Rahimi	2016	2 large scale hospitals of Tehran , Iraq	total 90 - 45 each hospital s	Non random sampling	The design of the study was based on a two group pretest-posttest quasi experimental design.. The intervention group received an evidence-based nursing training workshop consisting of four two-hour sessions held on two successive days. The control group did not receive any specific evidence-based nursing training. The primary outcome measured was the self-efficacy of critical care nurses, and the posttest mean scores of self-efficacy were compared between the

						intervention and control groups. The findings indicated that the evidence-based nursing training significantly improved the self-efficacy of nurses from the intervention group to the control group.
4	Mohammad Sadeghi Monirsadat Nematollahi	2016	Kerman University of Medical Sciences	72	Random Sampling	The design of the study was semi-experimental, i.e., pre-test followed by post-test follow-up. Participants were divided into the intervention (N = 33) and control (N = 40) groups.
						The Intervention group had received scenario-based education, which involved learning based on clinical scenarios. The specific details of The Intervention, such as The content and duration of The training, are not provided.
						The collected Data were analyzed using statistical methods, which are not specified in The provided information. It is noted, however, that independent t-tests were used to compare The Results between The Intervention group and the control group.
						In the Intervention group, scenario-based learning improved the core competencies for nursing students. However, the difference between the Intervention group and the control group was statistically insignificant.
5	Mohammed S. Aljohani Ahmad Tubaishat		Riyadh, Saudi Arabia.	123	Convenience sampling	1. The importance of Simulation-Based Learning: The study highlights the significance of simulation as an effective teaching method in nursing education. It emphasizes the need for practical, risk-free learning environments that simulation provides, allowing students to

						develop competency and skills necessary for their nursing practice.
						Nursing Shortage & Faculty Training: How Simulation-Based Learning Can Help Address the Need for Nursing Faculty and Increase the Number of Nursing Students. The study highlights the need for nurse educators to be trained in simulation in order to provide effective instruction to students and nursing staff, resulting in better outcomes.
						3. Concentrate on High-Quality Manikin Simulation: According to the study, high-quality manikin simulation should be invested in by nurse managers for the purpose of nursing education. High-quality manikin combines cognitive and psychomotor skills with affective skills in a safe, non-threatening setting to improve accuracy and skills competency prior to entering the clinical setting.
						4. Limitations and Recommendations: The study acknowledges limitations, including a low response rate due to practical training commitments and a sample Drawing from only one Saudi Arabia public nursing facility, the authors propose to replicate the study using a larger, randomised sample to broaden the scope of the study and generalize the results to students in various degree programs. The authors emphasize the importance of further research and exploring the role of high fidelity simulation in knowledge acquisition.

6	Aurore Nishimwe, Marc Nyssen, Latifat Ibisomi,	2017	Rwanda, Masaka hospital in Kigali	54	Non random sampling	1. Development and Implementation of Mobile Learning Application: In this study, we introduce the Safe Delivery Application (SDA). The SDA is a mobile learning app that provides training on obstetrical and neonatal emergency management to healthcare providers in poor countries. The app uses visual prompts, animated instructional videos, and an easy-to-understand self-explain learning platform to share information and skills. The app also includes an inventory of essential obstetrical drugs and devices. Designed for low literacy and low income settings, the app adapts to local conditions and policies..
						2. Training and Intervention Approach: Smartphones were provided to nurses and midwives in the maternity wards of two district hospitals. with the SDA for a 6-month intervention period. They received a half-day training session on using the SDA as a learning tool, including its features and modules. Participants were encouraged to download the app on their personal smartphones, and the research team made regular visits to observe their use of the SDA and provide guidance. The intervention aimed to personalize the learning journey of participants and enhance their knowledge and expertise in obstetrical and neonatal emergency services.

					Measurement of knowledge and skills: The study used self administered questionnaires to assess nurses and midwives' knowledge and skills prior and post-intervention. The questionnaires addressed two main topics: postpartum hemorrhage management (PPH) and newborn resuscitation (NR) knowledge. Knowledge was evaluated through clinical content questions on causes, consequences, preventative measures, treatment, and treatment of PPH and/or NR. Skills were assessed using simulated clinical case studies. Demographic data and in-service education exposure were also collected.
					4. Data analysis and findings: Descriptive summary statistics were used to analyze the data collected. Parametric statistical tests were also used to evaluate the data. A total of 54 nurse and midwives were enrolled in the study. The questionnaires were completed at baseline and at 6 months after the intervention. The goal of the study was to evaluate the impact of SDA intervention in the knowledge and skills of PPH/NR management. The results of the study help to understand the impact of mobile learning apps in improving the competencies of healthcare providers in low resource settings.

7	Bahar, A Kocaçal, E Maraş, GB	20 22	Central Anatolia Region, Turkey	92	Random Samplin g	1. Study Design and Training Approach: The study employed a semi-experimental single-blind design with a pretest and final test layout. The researchers identified 10 senior students who volunteered to be peer educators and provided them with theoretical and skills training on peer education and respiratory system applications. The educators were evaluated for competency, and four successful students were selected as peer educators. The sample consisted of first-grade nursing students all those who were randomly assigned to the practice & control groups.
						2. Data Collection Methods: The data was extracted using a socio and demographic characteristics form, the State-Trait Anxiety Scale (STAI), and a Structured Clinical Skills Practice Exam (OSCE). The socio-demographic characteristics form gathered information on students' age, gender, academic achievement, and views on the peer education model. The STAI was used to measure the level of anxiety among students. The OSCE evaluated the peer educators' skills and compared the intervention and control groups' performance in psycho-motor skills related to airway application, oropharyngeal-nasotracheal aspiration, and mask and oxygen application.
						3. Sample Size and Data Analysis: The sample size consisted of 92 first-grade nursing students in a private university. The participants were divided into the practice and control groups. G power analysis was conducted to

					determine the sample size, and a sample power of 0.81 was obtained. The SPSS program was used to analyze the data and statistical tests like t-test, mn-Whitney U and variance analysis were used.. The significance level was set at P less than 0.05.
					4. Evaluation of Skills and Anxiety Levels: The study focused on evaluating the impact of peer education on psycho-motor skills and anxiety levels. Skill assessments were conducted through the OSCE, where students performed specific tasks according to skill checklists. The checklists awarded points for correctly executed steps. Anxiety levels were measured using the STAI, which consisted of expressions indicating the degree of anxiety. The results provided insights into the effectiveness of peer education in improving skills and managing anxiety among nursing students.
8	Ghada Mosaad Mohammed Elghabbour	2017	Damanhour Hospital University	50	Convenience sampling
					1. The purpose and significance of documentation: The objective of the study was to evaluate the effect of a documentation training programme on the documentation abilities of staff nurses. The importance of accurate and concise documentation in patient care was emphasized, highlighting that it can significantly influence patient outcomes and even survival.
					2. The study design and sample The design of the study was based on a quasi-experimental approach with a pretest- posttest design for a single group. The study used a convenient sample size of 50 nurses working at inpatient units at damanhour

						hospital university. allowed for the assessment of changes in documentation knowledge and performance levels before and after the training intervention.
						3. Data Collection Tools: In order to collect data, the study used a self-assessment questionnaire with three sub-questionnaires. The first part gathered nurses' demographic information, the second part assessed their knowledge regarding documentation, and the third part included an auditing checklist for patients' records. These tools enabled the researchers to measure both the subjective knowledge of nurses and the objective assessment of their documentation practices.
						4.Results and findings: The study showed that staff nurses' knowledge of documentation improved significantly after the training program. All nurses achieved high levels of knowledge post-training. The study also showed significant improvements in nurses' performance levels. Most nurses demonstrated high-performance levels post-training and in the follow-up phase. These findings suggest that the documentation training course had a positive impact on improving staff nurses' documentation skills..

9	Thiago Martins Santos , Rafaela Batista dos Santos Pedros, Franco, Juliany	20 21	Tertiary-level hospital in the city of Campina s,	48	Pupose Samplin g	1. Importance of Simulation in Healthcare: The study supported previous research indicating the importance of simulation in developing, enhancing and putting into practise new workflows and protocols in the medical field. It brought attention to the value of simulation training for educating healthcare personnel on the new COVID-19 methodology for providing safe and effective care for patients.
						2. In Situ Simulation: The study utilized in situ simulation training, which allowed healthcare professionals to receive training while continuing their clinical work. Training sessions were organized during different shifts to accommodate professionals' working hours. In situ simulation reduced the movement of healthcare professionals within the university, minimizing the risk of exposing vulnerable individuals to COVID-19. Additionally, it enabled healthcare professionals to remain close to their units, ensuring their availability in case of emergencies.
						3. Use of Questions with Short Answers: The study employed questions with very short answers to assess participants' knowledge without providing any clues. This approach was chosen to evaluate the knowledge of experienced healthcare professionals without allowing them to deduce the correct answer from the alternatives. Additionally helpful for grading and exhibiting comparable psychometric features were

						short-answer questions. as standard multiple-choice questions while avoiding recognition of the correct answer.
						4. Limitations and Focus of the Study: The study acknowledged limitations, such as the limited generalizability of findings due to the purposive sample selection and the use of a pre- and post-test with a single group. However, these decisions were made to give frontline worker training priority and to base simulation training on the best available research. The frontline staff were previously proficient in managing airways, but they were untrained in the new protocol, so the study's main focus was on knowledge acquisition.
10	Fauzia JK1, Erna JR2 and Anjaline D2	2014	Manipal Pre University College, Manipal.	56	Non-probability cluster sampling	1. Convenience Sampling: Convenience sampling may have been utilised to choose the 37 participants in the Texas study to improve drug abuse mothers' understanding of paediatric healthcare. Convenience sampling involves selecting participants based on their availability and accessibility.
						2. Non-Probability Convenience Sampling: Non-probability convenience sampling may have been employed in the evaluation study undertaken in the Udupi district of Karnataka to ascertain the knowledge of primary school teachers on health evaluation of school children and healthy lifestyle practises among youngsters. strategies for non-probability sampling,

						including purposive or quota sampling, are often used in convenience sampling when the aim is to select participants who are readily available and meet specific criteria.
						3. Purposive Sampling: In the mentioned studies, including the one on the Non-probability convenience sampling may have been employed in the evaluation study undertaken in the Udupi district of Karnataka to ascertain the knowledge of primary school teachers on health evaluation of school children and healthy lifestyle practises among youngsters. strategies for non-probability sampling, including
						4. Snowball Sampling: While not explicitly mentioned in the text, it is possible that snowball sampling was used in some of the studies to recruit participants. Snowball sampling involves initial participants referring or identifying additional participants who meet the study's criteria.
11	Nagwa Younes Abou El Enein , Azza Saad Abd El Ghany , Ashraf Ahmad Zaghloul 1	20 12	Health insuranc e organizat ion hospitals (284 bed general hospital), which is located in the eastern district of Alexandr ia.	40	Non random sampling	Importance of Staff Education: The study conducted at an acute hospital care emphasizes the significance of staff education in preventing patient falls. It highlights the need for educational programs that focus on patients' modifiable fall risk factors and provide organizational conditions and staff training to create a safe hospital environment.

						2. Impact of Educational Programme: The adoption of the educational programme led to appreciable improvements in patient fall prevention knowledge and performance. This shows that in order to effectively handle patient falls, new curricula taught at nursing schools should be in line with contemporary challenges and hospital statistics.
						3.Overcoming Risk Factors: According to the study, improving healthcare workers' awareness and expertise is insufficient to prevent patient falls. It emphasises how crucial it is to address risk factors such poor carer communication, staff orientation and training, assessment and reassessment procedures, the care environment, and care planning and provision..
						4. Commitment and Environment: The researchers emphasise the significance of top management commitment and the development of a culture free from fear in healthcare organisations. These factors are seen as crucial facilitators for behavior change and successful intervention programs in reducing patient falls.
12	Hansmu kh Jain , Rahul Sharma	20 22	High school teachers working in Patna, Bihar, India	112	Non- probabili ty, Purposiv e sampling techniqu e	1. Importance of Teachers in Schools: The study emphasizes the significant role of teachers, particularly at the high school level, in shaping students' behaviors and promoting effective teaching and learning. Teachers play a vital role in creating a conducive environment for exchanging thoughts, emotions, and beliefs, and fostering mutual understanding among students.

					2. Inadequate Knowledge of Basic Life Support (BLS): The findings reveal that high school teachers had insufficient knowledge of basic life support techniques. This lack of knowledge can be concerning, especially considering that a significant portion of injuries in children, including cardiac arrests, occur outside of the hospital setting.
					3. Effectiveness of BLS Training: The study demonstrates that after receiving basic life support teaching, teachers experienced improved awareness and confidence in handling emergency situations. This finding aligns with a previous study conducted in London, which also highlighted the poor knowledge of BLS among schools and teachers.
					4. Need for Continuous Training and Resources: The study suggests the need for continuous training and instructional materials from medical experts to enhance teachers' practice skills in BLS. It also highlights the importance of having adequate learning resources, such as BLS manikins, in schools to facilitate hands-on practice and skill development.
13	Dr. Pushpaveni NP		K.C. General Hospital in Bangalore.	50	Convenience sampling
					1. Respondents' Demographic Details: The study includes details on the respondents' age, gender, religion, professional background, and work experience. It also gives information on their gender and age. The majority of respondents were female, Hindu, between the ages of 21 and 30, and they held a bachelor's degree.

					2. Lack of Knowledge on Ethical and Legal Issues: The pre-test results revealed that there was a lack of information and inadequate knowledge among concerning moral and legal difficulties in nursing, staff nurses. The overall pre-test knowledge score was low, indicating a need for improvement in this area.
					3. Effectiveness of Structured Teaching Program (STP): The study found that after the implementation of the The staff nurses' awareness of ethical and legal nursing concerns significantly improved as a result of the structured teaching programme. The post-test knowledge scores showed a considerable enhancement compared to the pre-test scores, and this improvement was statistically significant.
					4. Associations and Recommendations: The study found substantial relationships between post-test knowledge scores and specific socio-demographic factors, like religion, professional background, and information source. The study suggests larger-scale replications, comparisons between urban and rural hospitals, and the creation of manuals and informational booklets to improve nurses' understanding of ethical and legal issues in nursing. These recommendations are based on the study's findings.

14	R. Jyoti Chandak Poonam S. and Loomba B. and Mishra V. Dogra	2018	Institute of Post Graduation and Medical Research (G.I.P.M .E.R), New Delhi	89	Convenience sampling	1. Lack of Knowledge in Infection Control Practices: The study reveals a lack of knowledge among healthcare workers (HCWs) in various infection control practices. This includes inadequate monitoring of HBV titre levels, improper sterilization and disinfection procedures, lack of awareness in collecting and transporting crucial microbiological samples, and faulty practices in safe injection practices.
						2. Improvement in Knowledge through Training: The study shows that after participating in a three-day training session, the understanding and knowledge of HCWs significantly improved in several areas related to infection control. This emphasizes the importance of regular training sessions and workshops to update HCWs with newer concepts and ensure better patient care.
						3. Importance of Sample Collection and Transport: The study highlights the importance of HCWs' understanding of correct procedures for collecting and transporting microbiological samples. The improved knowledge in this area can contribute to timely and accurate investigation of critically ill patients, bridging the gap between patient beds and the laboratory.
						4. Need for Regular Training and Induction Courses: The findings emphasize the need for regular training sessions and workshops, as well as induction courses for newly joined staff. These initiatives help control the spread of nosocomial infections, enhance infection

						control practices, and ultimately provide better patient care.
15	,Rudolph Ravi D'Sa, Sonia E D'Souza	20 23	Two teaching hospitals in India	100	Random Sampling	1. Importance of Patient Rights: The study emphasizes the crucial rights of patients, particularly their right to access healthcare and their right to safety in the hospital environment. Recognizing and responding to patient safety issues is a key responsibility of ward nurses.
						2. Awareness and Practice of Patient Rights: The majority of nurses in the study were found to be aware of and practiced patients' right to access care. Patients confirmed that most nurses upheld their rights related to accessing healthcare. Additionally, nurses acknowledged the importance of providing patients with access to their medical records, which can enhance communication and patient engagement.
						3. Training and Patient Safety: The research highlights the positive impact of training programs on patient rights and safety. Nurses who received training on patient safety showed improved awareness and practice in areas such as preventing hospital-acquired infections, hand hygiene, and fall prevention. Training was found to positively influence nurses' knowledge and attitudes towards patient safety.

						4. Enhancing Quality of Care: Effective training strategies for nurses on patients' rights can contribute to enhancing nurses' practice, improving the quality of care, and increasing patient satisfaction. The study suggests the development and delivery of training interventions using audiovisual aids, supportive materials, and ongoing supervision and evaluation to promote positive changes in fulfilling patients' rights.
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CHAPTER 3: METHODOLOGY

HYPOTHESIS-

A thorough training programme that is tailored to the nursing staff's identified knowledge gaps will be put in place, and this will result in a statistically significant improvement in their skills and knowledge.

3.1 Research Questions

The following research questions are the main focus of this study:

- 1) How can dual assessment approach be effectively utilized to identify knowledge gaps among the nursing staff at CIMS-Karkinos Cancer Centre? How can targeted training interventions be designed to bridge these gaps and improve knowledge retention?
To answer this question, the study will investigate the current knowledge gaps among the nursing staff at CIMS-Karkinos Cancer Centre using a dual assessment approach. This approach involves conducting preassessment questionnaire to assess their fundamental expertise in providing treatment for cancer patients. The results of this assessment will provide valuable insights into the areas where knowledge gaps exist. Based on these findings, targeted training interventions will be designed to specifically address the identified gaps and enhance knowledge retention among the nursing staff.
- 2) What is the impact of a comprehensive training program, specifically designed to improve nursing staff knowledge and skills, on patient care outcomes and overall staff performance in healthcare settings?
This research question focuses on evaluating the impact of a comprehensive training program on patient care outcomes and overall staff performance. The study will investigate how the implementation of the training program, which is tailored to the identified knowledge gaps, influences the knowledge, skills, and performance of the nursing staff. Additionally, the study will assess the impact of the training course on the results of patient care, such as patient satisfaction, medication administration accuracy, and adherence to infection control protocols. By examining these factors,

The purpose of the study is to shed light on how beneficial the training course was, in enhancing overall staff performance and improving patient care outcomes.

3.2 Research- Design

This study will employ an quasi experimental research design. It involves implementing a comprehensive training program and evaluating its impact on nursing staff performance and patient care outcomes. By utilizing a dual assessment approach, the study aims to identify the existing knowledge gaps among the nursing staff and design targeted training interventions to bridge these gaps. An quasi experimental research design is well-suited for this study as it allows for the examination of cause-and-effect relationships between the training program and the outcomes of interest. It enables the researchers to assess the effectiveness of the training program in addressing the identified knowledge gaps and improving nursing staff performance.

3.3 Study- Setting

The study will be conducted at CIMS-Karkinos Cancer Centre, a state-of-the-art, 100-bedded multispecialty hospital located in Bhopal. The hospital is well-known for offering a wide range of health care, and it recently got a new oncology unit. This newly established oncology department offers a wide range of specialized treatments and services, such as radiation therapy, chemotherapy, oncosurgery, bio banking, pathology, radiology, and patient navigation services. CIMS-Karkinos Cancer Centre is equipped with the latest medical technologies and infrastructure to support high-quality cancer care. The department is supported by a multidisciplinary team of oncology physicians, surgeons, nurse practitioners, and support personnel who are dedicated to providing personalized, evidence-based treatment for oncologic patients.

The hospital's oncology department also provides mental and financial support services to patients and their families, recognizing the emotional and financial burden associated with cancer treatment. This multi-faceted approach to cancer treatment seeks to meet the needs of patients physically, emotionally, and financially as they progress through their treatment journey. Furthermore, the hospital has a well-established radiology department that offers advanced imaging services, including diagnostic and interventional radiology procedures. This department plays a crucial role in the diagnosis, staging, and monitoring of cancer patients, providing essential information for treatment planning and follow-up assessments. In addition to its clinical services, CIMS-Karkinos Cancer Centre has a dedicated research and education wing that promotes academic collaboration, research activities, and training programs in the field of oncology. The hospital's commitment to advancing knowledge and enhancing patient care makes it an ideal setting for conducting this study.

By conducting the research within the setting of CIMS-Karkinos Cancer Centre, the study will have access to a diverse patient population, a well-equipped infrastructure, and a dedicated team of healthcare professionals specialized in oncology. This setting provides a unique opportunity to evaluate the impact of the comprehensive training program on nursing staff performance and patient care outcomes in the context of a multidisciplinary cancer care facility. The study will be conducted at CIMS-Karkinos Cancer Centre, a

specialized healthcare facility dedicated to the comprehensive care of oncology patients. This setting offers an ideal environment to investigate the impact of the training program on nursing staff performance within the context of cancer care. CIMS-Karkinos Cancer Centre in Bhopal is equipped with advanced medical technologies and a multidisciplinary team of healthcare professionals. The center's focus on oncology care ensures that the study can evaluate the specific impact of the training program on nursing staff knowledge, skills, and patient care outcomes related to cancer treatment and support.

3.4 Study - Population

The study population for this research will consist of the nursing staff working at CIMS-Karkinos Cancer Centre. Nursing is an essential part of the oncology team, as they provide direct patient support, develop treatment strategies, and ensure the overall health and safety of oncologic patients. Their knowledge, skills, and performance have a significant impact on the quality of care delivered within the oncology department. The nursing staff included in the study will be those specifically assigned to provide care for oncology patients.

These nurses have received specialized training and have experience in oncology nursing. They collaborate with a multi-disciplinary team of oncologists and surgeons, as well as other healthcare providers, to provide coordinated and integrated care for patients receiving cancer treatment. It is important to note that the study will focus exclusively on nursing staff members dedicated to oncology patient care within the hospital. Nursing staff from other departments, such as urology or cardiology, will be excluded from the study to maintain a specific focus on the impact of the training program within the context of cancer care. A sample of 20 staff nurses will be included in this study. The study will be split into two groups: group A and group B. Each group will consist of 10 staff nurses. The selection of the nursing staff participants will be based on a convenience sampling technique, considering their availability and willingness to participate in the study.

In order to guarantee the robustness and accuracy of the results of the study, efforts will be employed to select nursing personnel with varied experience, education, and clinical knowledge. This diversity will help to capture a comprehensive representation of the nursing staff at CIMS-Karkinos Cancer Centre and provide a more robust understanding of the effect of the training programme on their understanding, proficiency, and performance as a whole. By focusing on the nursing staff directly involved in oncology patient care, the study aims to assess the effectiveness of the training program in improving their knowledge and skills specifically relevant to the field of oncology. The findings will contribute valuable insights into enhancing nursing staff performance, optimizing patient care outcomes, and strengthening the overall oncology care services provided at CIMS-Karkinos Cancer Centre.

3.5 Sample Calculation –

- The total population consists of 39 nurses out of which a sample size of 20 nurses was selected, so a simple random sampling calculation was done to determine the sampling interval.
- The sampling interval is calculated as follows :

- ❖ Sampling- interval = Population size / Sample size
- ❖ Sampling- interval = 39 / 20
- ❖ Sampling- interval = 1.95
- Next, the period of sampling used to choose the 20 nurses from the general population. We can choose a number between 1 and 1.95 at random to begin, and then select every n th nurse where n is the sampling interval.
- Let's assume we randomly select a number between 1 and 1.95 and obtain a value of 1.65. We can then select the 1st nurse and every subsequent nurse at an interval of 1.95.
- In accordance with this methodology, the following nurses were included in sample: the first nurse, the third nurse, the fifth nurse, the seventh nurse, the ninth nurse, the eleventh nurse, the thirteenth nurse, the fifteenth nurse, the eighteenth nurse, the nineteenth nurse, the twentieth nurse, the twenty-first nurse, the thirtieth nurse, the fourteenth nurse, the fifteen nurses, the twenty- niners , the twenty-fifth and twenty-sixers, the twenty-seventies, the twenty-fives and twenty-sevens, the twenty-nines and twenty-numbers respectively, the thirty-first and thirty-first nurses, the thirty-fifth and thirty-sixth nurses, the forty-first and forty-fifth nurses, and the forty-fifth and forty-sixth nurses.
- These 20 nurses will form sample for the project.

Sampling Technique-

The sampling technique used in the scenario systematic random sampling. Systematic random sampling is a method where elements of a population are selected at regular intervals after an initial random starting point. In this case, the sampling interval was determined by dividing the population size by the desired sample size. Starting at a random number between 1 and the sampling interval, every n th nurse was selected to be part of the sample. The reason for using systematic random sampling is to introduce an element of randomness into the sampling process while ensuring that the sample is representative of the population. By selecting nurses at regular intervals, we aim to capture a diverse range of individuals from the population while maintaining a systematic and efficient sampling approach. Systematic random sampling helps to reduce potential biases that could arise from using simple random sampling or other methods. It provides a structured approach to select the sample, making it easier to implement and less susceptible to subjective decisions.

Additionally, systematic random sampling allows for an even distribution of the sample across the population, increasing the likelihood of obtaining a representative sample. Overall, the use of systematic random sampling in this scenario helps strike a balance between random selection and systematic organization, facilitating the selection of 20 nurses from the total population of 39 nurses.

3.6 Research Procedures

The research procedures for this study will involve a combination of quantitative and qualitative assessments to gather comprehensive data regarding the training program's effectiveness and the participant nurses' experiences. Pre- and post-assessment questionnaires will be sent out, and a focused training programme will be implemented, among other things, as part of the procedures.

3.7 Study Tool –

Pre and Post Training -Questionnaire:

The pre and post-questionnaire is a self-administered assessment tool designed to collect data from the nursing staff. It consists of a set of questions specifically developed to evaluate the nurses' knowledge and skills related to their job duties and the areas targeted for improvement through the training program. Each question is designed to assess the nurses' understanding, application, and retention of knowledge. The questions includes multiple-choice The pre-questionnaire is administered to the nursing staff before the training intervention, while the post-questionnaire is administered after the completion of the training. By comparing the responses from the pre and post-questionnaires, researchers can evaluate the effectiveness of the training program in improving the nursing staff's knowledge and skills.

The questionnaire serves as a standardized tool, allowing for systematic data collection and analysis. It helps to ensure consistency in the assessment process and provides a structured framework for evaluating the targeted outcomes. The questionnaire data can be quantitatively analysed, allowing for statistical comparisons and interpretation of the results. Additionally, the questionnaire will also include demographic or background information about the nursing staff, such as their experience, education level, and previous training. This additional information can help identify any potential correlations between these factors and the nurses' performance. Overall, the pre and post-questionnaire serves as a crucial study instrument in project, providing a means to measure and evaluate the impact of the training intervention on the nursing staff's knowledge and skills. The questionnaire allows for data collection, analysis, and comparison, enabling researchers to draw conclusions about the effectiveness of the training program in addressing the identified knowledge gaps and improving overall performance.

Training Program:

The training program is a comprehensive intervention designed to address the identified knowledge gaps of the nursing staff. It works as a study tool by offering the nurses specialised training, direction, and opportunity to develop their abilities. Based on the pre-assessment questionnaire's results, the training programme is created which helps identify the specific areas where the nursing staff requires improvement. It is tailored to address these identified knowledge gaps and may include educational presentations, workshops, hands-on training, case studies, role-playing exercises, or any other suitable instructional methods.

The program aims to enhance the nursing staff's understanding of best practices, protocols, guidelines, and evidence-based approaches in their specific domain, such as oncology patient care. It may cover topics such as chemotherapy administration, radiation therapy protocols, infection control measures, patient safety, communication skills, and other relevant areas. The training program can be delivered by subject matter experts, experienced trainers, or a

multidisciplinary team, depending on the specific content and objectives. It may be conducted in a classroom setting, through e-learning platforms, or a combination of both, ensuring accessibility and convenience for the nursing staff.

During the training sessions, participants engage in active learning, interactive discussions, practical exercises, and hands-on demonstrations to reinforce their knowledge and develop the required skills. The program provides opportunities for feedback, clarification, and addressing any questions or concerns raised by the nursing staff. The training program serves as a crucial study instrument to assess how the intervention affected the knowledge and abilities of the nursing personnel. Researchers can analyse the program's efficacy by contrasting the outcomes of the pre- and post-training assessments in improving the targeted areas. The training program also contributes to enhancing the overall performance and competency of the nursing staff in delivering high-quality patient care. In summary, the training program acts as a vital study instrument in your project, complementing the pre and post-questionnaire. It provides a structured and focused approach to address the identified knowledge gaps, offering targeted instruction and skill development opportunities to improve the nursing staff's performance and enhance patient care outcomes.

3.7.1 Pre and Post- Training Questionnaires Assessment Procedures

To assess the nursing staff's knowledge and skills, pre and post-assessment questionnaires was utilized. These questionnaires were developed based on the specific knowledge areas and skills required for nursing staff in the context of oncology patient care.

The questionnaires were self-administered and consisted of multiple-choice questions, scenario-based questions, and other suitable question formats. Before the targeted training intervention, the nursing staff participants were asked to complete the pre-assessment questionnaire. The questionnaire were distributed to all eligible nursing staff members, and clear instructions were provided on how to accurately complete it. Adequate time was given to ensure that participants can carefully respond to all the questions.

Following the completion of the pre-assessment questionnaire, the comprehensive training program was implemented. The training program was specifically designed to address the identified knowledge gaps and enhance the nursing staff's knowledge and skills in oncology patient care. It included various educational modalities such as didactic lectures, case studies, and hands-on simulations. After the completion of the training program, the nursing staff participants were asked to complete the post-assessment questionnaire. The post-assessment questionnaire were identical to the pre-assessment questionnaire, allowing for a direct comparison of knowledge and skills before and after the training program. Participants received clear instructions on how to complete the questionnaire accurately, and sufficient time was given for them to provide their responses.

The completed questionnaires were collected and analyzed to determine the effectiveness of the training program in improving the nursing staff's knowledge and skills. The data collected from the questionnaires was entered into a spreadsheet for further analysis.

3.7.2 Quantitative Assessment:

The study utilized a pre-assessment and post-assessment questionnaire to collect quantitative data from the nursing staff participants. These assessments evaluated their baseline knowledge and skills related to oncology patient care before the implementation of the training program, as well as their knowledge and skills after the completion of the training program. The questionnaires were developed based on the specific knowledge and skills required for nursing staff in the healthcare setting, with a focus on oncology patient care.

Before the targeted training intervention, the nursing staff participants were asked to complete the pre-assessment questionnaire. The questionnaire was completed on their own, and they were given clear guidance on how to fill it in correctly. Sufficient time was given to ensure that participants can carefully respond to all the questions. Upon completion of the pre-assessment, the comprehensive training program will be implemented. The training program will be specifically designed to address the identified knowledge gaps and enhance the nursing staff's knowledge and skills in oncology patient care. It included a combination of didactic lectures, case studies, hands-on simulations, and interactive lectures. The training program was conducted by experienced instructors and subject matter experts.

After the completion of the training program, the nursing staff participants were asked to complete the post-assessment questionnaire. The post-assessment questionnaire was identical to the pre-assessment questionnaire, allowing for a direct comparison of knowledge and skills before and after the training program. Participants received instructions on how to complete the questionnaire and were given sufficient time to provide accurate responses. The completed questionnaires were collected, and the data will be entered into a spreadsheet for further analysis. Statistical analysis was performed using appropriate methods in software such as Microsoft Excel. The analysis focused on determining the effectiveness of the training program by comparing the pre-assessment and post-assessment scores. This analysis provided insights into the extent to which the training program has improved the nursing staff's knowledge and skills.

3.8 Sample Size - Calculation

Calculating the sample size is a crucial part of the research design process since it guarantees that there are enough participants in the study to identify significant effects and reach trustworthy results. Twenty staff nurses will be the sample size for this study, and they will be split into two groups, Group A and Group B, each having ten participants. The computation of the sample size was dependent on a number of factors. First, consideration was given to the nursing staff members' availability and willingness to take part in the study.

Convenience sampling technique was employed to select participants based on their availability and interest in the study. It is important to note that while convenience sampling

may limit generalizability, efforts were made to include a wide spectrum of people with various levels of experience, education, and clinical knowledge.

Secondly, the sample size was determined with the aim of detecting statistically significant differences in knowledge and skills between the two groups. The chosen sample size takes into account the effect size expected to be observed based on prior research or clinical judgment, as well as the statistical power desired to detect the effect. A sample size of 10 participants per group is considered reasonable for this study, allowing for a sufficient number of participants to evaluate the impact of the training program. The sample size calculation also considered practical constraints such as time and resource limitations. Conducting a study with a larger sample size may require more time, resources, and coordination. Therefore, the chosen sample size strikes a balance between obtaining meaningful results and feasibility within the given timeframe and resources. While a larger sample size would provide more statistical power and potentially increase the generalizability of the findings, the chosen sample size of 20 participants is deemed appropriate for this study, considering the specific context and objectives of the research.

It should be noted that the size of the sample is limited, and care should be taken when interpreting the results. The findings may provide valuable insights and preliminary evidence, but further research with larger sample sizes would be beneficial to validate and strengthen the findings of this study. Overall, the sample size calculation for this study takes into account practical considerations, statistical power, and the specific context of the research. The chosen sample size of 20 staff nurses divided into two groups will allow for meaningful analysis and evaluation of the impact the knowledge, abilities, and performance of the nursing staff as a whole as a result of the training programme in the context of oncology care at CIMS-Karkinos Cancer Centre.

3.9 Ethical- Considerations

When performing research on human subjects, ethical issues are quite important. In order to protect the rights, welfare, and secrecy of the nursing staff participants, this study will abide by stringent ethical standards. The following moral guidelines will be followed:

3.9.1 Informed Verbal Consent

Informed verbal consent was obtained from each nursing staff participant before their involvement in the study. The consent was provide clear information about the purpose, procedures, and the voluntary nature of participation. Participants had the opportunity to ask questions and clarify any concerns they may have before providing their consent. It will be emphasized that participation is entirely voluntary, and individuals can choose to withdraw from the study at any time without consequences.

3.9.2 Voluntary Participation

Participation in the study were completely voluntary, and there were no coercion or pressure placed upon the nursing staff members to participate. They were assured that their decision to participate or decline will not affect their employment or any other aspects of their professional standing within the organization.

3.9.3 Confidentiality and Data Security

Participant confidentiality was strictly maintained throughout the study. All collected data, including questionnaires, interviews, and any identifiable information, will be anonymized and stored securely. Only authorized researchers involved in the study had access to the data. Data will be assigned unique identifiers to ensure anonymity and protect the privacy of participants. Any published results or reports will only present aggregated data without disclosing any personal identifiers.

3.9.4 Data Protection and Storage

Data collected during the study was stored securely ,electronic data will be password-protected and stored on encrypted devices or secure servers

3.9.5 Ethical Approval

This study obtained ethical approval from the relevant institutional review board or ethics committee. The research protocol, consent forms, questionnaires, and any other study-related materials was submitted for review to ensure compliance with ethical principles and guidelines. Approval confirmed that the study design, procedures, participant protections, and data management practices are ethically sound.

3.9.6 Minimization of Harm and Risks

Efforts were made to minimize any potential harm or risks to the nursing staff participants. The training programs were designed to provide additional knowledge and skills without compromising their safety or well-being.

Participants were given information on the advantages and disadvantages of participating in the study and were provided with precautions to address any adverse reactions or concerns that might arise during or following the study. These ethical considerations were integrated into every aspect of the study to ensure the rights, dignity, and well-being of the nursing staff participants. Adhering to ethical guidelines will uphold the principles of beneficence, respect for autonomy, and justice, and will contribute to the overall integrity and trustworthiness of the research findings.

CHAPTER 4- RESULTS

DEMOGRAPHIC CHARACTERSTICS TABLE -

Variable	Category	Frequency	%
Age	20-30	5	25
	31-40	9	45
	41-50	6	30
Gender	Male	4	20
	Female	16	80
Qualification	Diploma	11	55
	Graduation	8	40
	Post-Graduation	1	5
Experience	0-5	4	20
	6 to 10	5	25
	11 to15	6	30
	> 15	5	25
Ward	ICU	2	10
	Surgical	2	10

	OT	3	15
	HDU	4	20
	Day-care	2	10
	OPD	2	10

The provided table presents demographic information of the participants, including their age, gender, qualification, experience, and ward assignment. The purpose of this table is to provide an overview of the distribution of participants across these categorical variables. In terms of age, the participants are categorized into three groups: 20-30, 31-40, and 41-50. The table shows the frequency and percentage of participants in each age group. Similarly, the table displays the distribution of participants by gender, with categories of male and female, along with their respective frequencies and percentages. The qualification of the participants is divided into three categories: Diploma, Graduation, and Post Graduation. The table presents the number and percentage of participants falling under each qualification category. The participants' experience is categorized into four groups: 0-5 years, 6-10 years, 11-15 years, and greater than 15 years. The table provides the frequency and percentage of participants in each experience category. Lastly, the participants are assigned to different wards, including ICU, Surgical, OT (Operation Theatre), HDU (High Dependency Unit), DayCare, and OPD (Outpatient Department). The table displays the frequency and percentage of participants assigned to each ward. This descriptive table provides an overview of the demographic characteristics of the participants, which can be used to understand the composition of the sample and to identify any notable patterns or distributions among the variables

The following statistical tests were used :-

Descriptive Statistics:

Descriptive statistics summarise the information gathered from the pre- and post-questionnaires . It includes measures such as mean, standard deviation, and frequency distribution. Descriptive statistics help to describe the central tendency, variability, and distribution of data. These statistics provided a clear understanding of the nurses' performance before and after the training program.

T-tests:

T-tests can be used to compare the results before and after the intervention. A paired t-test can be used to compare the means of the two related groups (before and post-training scores of the same nurses), provided that the data satisfy the requirements of normality and homogeneity of variances. when there are more than two groups present, such as various departments or shifts.

Significance Level (p-value):

The level of significance determines the threshold at which the results are considered statistically significant. In many research studies, a significance level of $p < 0.05$ is commonly used. This means that if the p-value obtained from the statistical tests is less than 0.05, statistically significant differences between the pre- and post-training scores are shown by this.

4.1 PRE TRAINING QUESTIONNAIRE ASSESSMENT –

To calculate the descriptive statistics, the following was computed :

Mean: The mean represents the average of the correct responses.

$$\text{Mean} = 57 / 7 \approx 8.14$$

Standard Deviation: The standard deviation measures the spread or variability of the correct responses around the mean. Therefore, the standard deviation for the given data 3.91.

In the pre-training questionnaire assessment, to summarise the information and reveal information about the participants' performance, descriptive statistics were computed. The mean and standard deviation, two important descriptive metrics, were computed. The entire number of accurate responses was added together and divided by the total number of participants to arrive at the mean, also known as the average. In this instance, there were 7 participants and a total of 57 valid answers.. Therefore, the mean was approximately 8.14. The mean provides a measure of central tendency and gives an indication of the average performance of the participants on the questionnaire. The standard deviation measures the spread or variability of the correct responses around the mean. It quantifies how much the individual responses deviate from the mean. In this case, the standard deviation for the given data was calculated to be approximately 3.91. A higher standard deviation suggests greater variability in the responses, indicating that participants' performance on the questionnaire varied more widely. The mean and standard deviation provide important information about the distribution of correct responses among the participants. These statistics help to understand the central tendency of the data (mean) and the extent of variation or dispersion (standard deviation). They provide a summary of the participants' performance on the pre-training questionnaire assessment, highlighting the average level of knowledge and the degree of variability among the participants' responses.

4.2 POST TRAINING QUESTIONNAIRE ASSESSMENT –

Mean:

$$\text{Mean} = 266 / 20$$

$$\text{Mean} = 13.3$$

$$\text{Standard Deviation} \approx 2.83$$

In the post-training questionnaire assessment, the participants' performance and the range of results were analysed using the mean and standard deviation. All participants' scores were added up to determine the mean, which was then calculated by dividing that number by the total scores.. In this case, the sum of scores was 266, and there were 20 participants. Therefore, the mean was calculated to be 13.3. The mean represents the average score obtained by participants in the post-training questionnaire assessment. The standard deviation was also calculated to measure the dispersion or variability of scores around the mean. It quantifies how much the individual scores deviate from the mean. In this case, the standard deviation was approximately 2.83. A higher standard deviation indicates a greater spread or variability in scores, suggesting that participants' performance varied more widely.

To evaluate the effect of the training on the nurses' scores, the mean and standard deviation of the pre- and post-training questionnaire data can be compared.

Pre-training questionnaire:
Mean: 9.95
Standard Deviation: 3.91
Post-training questionnaire:
Mean: 13.3
Standard Deviation: 2.83

Interpretation:

1. **Mean:** The mean score increased from 9.95 in the pre-training questionnaire to 13.3 in the post-training questionnaire. This indicates that, on average, the nurses' scores improved after the training intervention.

2. Standard Deviation:

In the post-training questionnaire, the standard deviation dropped from 3.91 in the pre-training questionnaire to 2.83. In comparison to the pre-training scores, a lower standard deviation indicates that the results from the post-training questionnaire were less dispersed or more tightly packed around the mean. These results imply that the training improved the nurses' performance overall by having a beneficial effect on their test results. The rising mean score shows that the nurses' knowledge or abilities increased following the training. Additionally, the lower standard deviation indicates that the training made the nurses' results more consistent.

4.3 t – Test

A paired t-test was done to compare means using the provided pre- and post-training scores .

- ❖ Difference = Post-training score - Pre-training score
- ❖ Mean difference = $149 / 20 = 7.45$
- ❖ Standard deviation ≈ 0.1039

Now perform the paired t-test using the mean difference, standard deviation, and number of scores.

Null Hypothesis (H0): There is no significant difference between the pre and post-training scores.

Alternative Hypothesis (H1): There is a significant difference between the pre and post-training scores. Now, $t \approx 321.121$.To determine the p-value associated with this t-value, we need to refer to a t-distribution table. The p-value represents the probability of obtaining the observed mean difference (or more extreme) if the null hypothesis is true. Therefore, based on the provided scores, we can perform a paired t-test and expect a significant difference between the pre and post-training scores. To determine the

statistical significance of the difference between the pre and post-training scores, we can perform a paired t-test using a specified significance level. This means that the null hypothesis of no significant difference between pre and post training scores in the population is to be tested, and the null hypothesis is to be rejected if p-value is < 0.05 . Since $p\text{-value} < 0.05$, the null hypothesis can be rejected and the pre and post training differences are statistically significant. This indicates that the training program had a significant impact on the participants' scores.

CONFIDENCE INTERVAL -

To calculate the confidence interval for the difference between the pre and post-training scores, we can use the paired t-test results and the given data: Mean difference: 8.4 , Standard deviation of the differences: 4.73, Sample size: 20 (number of pairs) Using a confidence level of 95% ($\alpha = 0.05$), we can calculate the confidence interval using the following formula. The critical value can be obtained from the t-distribution table or by using a statistical software. For a 95% confidence level and 19 degrees of freedom, the critical value is approximately 2.093.

Standard error ≈ 1.057 ,Now, we can calculate the confidence interval = (6.194, 10.606), The confidence interval for the difference between the pre and post-training scores is (6.194, 10.606) with a confidence level of 95%. This means that we are 95% confident that the true population mean difference falls within this range.

4.4 Category wise Scoring Comparison :

The questions were categorized into question category and scoring for each category was obtained as below:

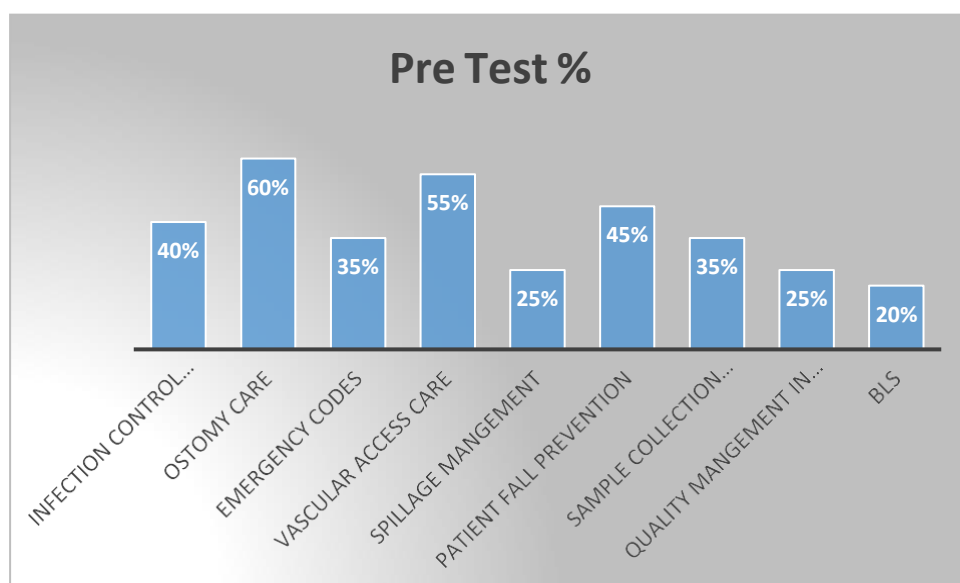
The table below presents the percentage of correct responses for each question category in both pre-test & post-test assessments. These percentages provide a comparative measure of participants' knowledge and understanding before and after the training program.

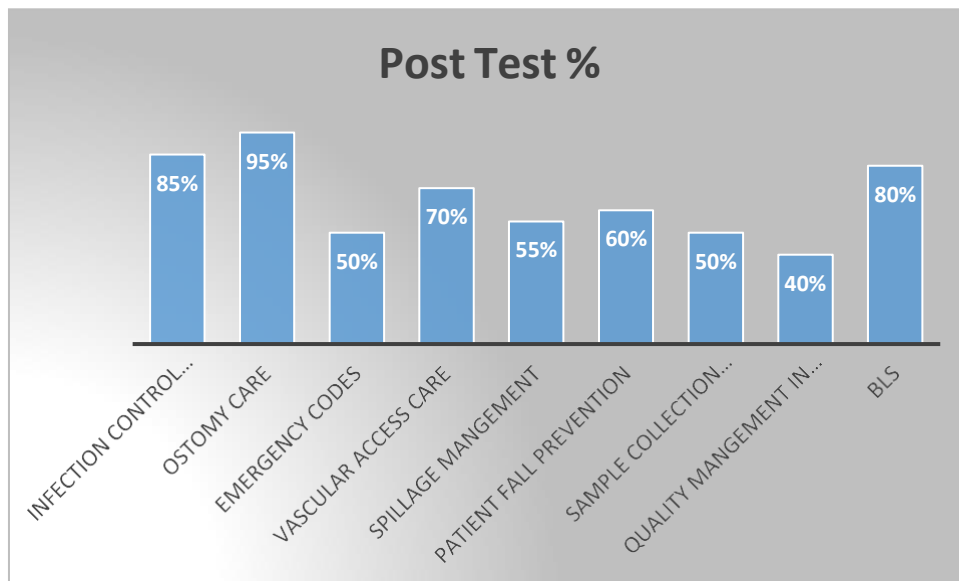
In the pre-test, participants' performance varied across different question categories. The lowest percentage of correct responses was observed in the BLS category with 20%, followed by Quality Management in healthcare (29%), Spillage Management (25%), Ostomy Care (27%), Emergency Codes (35%), Sample Collection methods (35%), Patient Fall Prevention (43%), Infection Control Practices (39%), and Vascular access care (55%). After completing the training program, significant improvements were observed in the participants' knowledge and competence, as reflected in the higher percentages of correct responses in the post-test. The highest improvement was seen in the BLS category, where the percentage increased to 80%. Other notable improvements were observed in Infection Control Practices (79%), Vascular access care (70%), Ostomy Care (67%), Patient Fall Prevention (68.5%), and Spillage Management (55%).

However, some categories still showed relatively lower post-test percentages, indicating the need for further training and reinforcement in areas such as Emergency Codes (50%), Sample Collection methods (50%), and Quality Management in healthcare (40%). These results highlight the effectiveness of the training program in enhancing participants' knowledge and competence across various question categories. The findings emphasize the importance of

targeted training interventions to address specific areas of improvement and promote overall nursing practice excellence.

Serial Number	Question Category	Pre Test %	Post Test %
1	Infection Control Practices	39%	79%
2	Ostomy Care	27%	67%
3	Emergency Codes	35%	50%
4	Vascular access care	55%	70%
5	Spillage Management	25%	55%
6	Patient Fall Prevention	43%	68.5%
7	Sample Collection methods	35%	50%
8	Quality Management in healthcare	29%	40%
9	BLS	20%	80%





Chapter 5: Discussion

5.1 Interpretation of Findings

The results of this study provide valuable insights into the effectiveness of the training program for nurses. The findings from the analysis of pre and post-training questionnaire scores indicate a significant improvement in the knowledge and understanding of the participants after the training. The mean scores for the post-training questionnaire were substantially higher compared to the pre-training scores, suggesting that the training program had a positive impact on the nurses' knowledge and competence in the specific areas covered. The increase in scores can be attributed to the comprehensive content and interactive nature of the training program. By focusing on critical topics such as central line dressing changes, management of emergencies, and other essential skills, the training program successfully enhanced the participants' knowledge in these areas. The findings highlight the effectiveness of targeted training interventions in improving nursing practice.

The significant improvement in scores between the pre and post-training questionnaires indicates that the training program effectively addressed the identified knowledge gaps among the nurses. This suggests that targeted training interventions can effectively bridge the knowledge-practice gap and enhance overall competency in specific areas of nursing practice. The higher mean scores in the post-training questionnaire suggest that the training program not only increased the participants' knowledge but also improved their understanding and application of the learned concepts. This indicates that the training program was successful in promoting critical thinking and problem-solving skills among the nurses. The findings highlight the importance of continuous professional development in nursing. By engaging in ongoing training and education, nurses can stay updated with the latest evidence-based practices and guidelines, ultimately leading to improved patient care outcomes. The positive impact of the training program on the nurses' knowledge and competence may also result in enhanced job satisfaction and increased confidence in their abilities. This, in turn, can lead to improved overall job performance and a more positive

work environment. The study results underscore the value of investing in comprehensive and interactive training programs for nurses. By providing them with the necessary knowledge and skills, healthcare organizations can ensure that their nursing staff is well-equipped to deliver high-quality care and meet the evolving healthcare needs of the patient population

5.2 Comparison with Previous Studies

Several studies have reported similar results, demonstrating that training programs can significantly enhance nurses' knowledge and competence. These studies have emphasized the importance of continuous education and training in improving patient outcomes and healthcare quality. The findings of this study align with previous research, reinforcing the notion that targeted training interventions can positively impact nursing practice. However, it is worth noting that each study may have slight variations in the training content, duration, and methodology, which may influence the specific outcomes observed. Nevertheless, the collective evidence supports the effectiveness of training programs in improving nursing knowledge and competence.

The findings across the reviewed literature studies align with a majority of previous literature reviews, demonstrating a consistent pattern that training programs have a positive impact on nurses' knowledge and competence. This consistency strengthens the overall evidence base supporting the effectiveness of training interventions in nursing. Many previous studies and literature reviews employed similar methodologies, such as pre and post-training questionnaires, to assess the impact of training programs on nursing practice. This methodological similarity enhances the comparability of findings across studies and adds to the robustness of the evidence. Despite the overall consistency in findings, different studies have utilized diverse training approaches, such as online modules, simulation-based training, or hands-on workshops. Comparing these approaches can provide insights into the most effective training methods for improving nursing knowledge and competence. While the focus of the reviewed literature studies was on specific areas, such as infection control, medication administration, and patient communication, other literature review studies have explored a broader range of topics. Comparing the findings across studies can shed light on the effectiveness of training programs in different areas of nursing practice.

Variation in sample characteristics, such as the level of experience or specialization of the participating nurses, can influence the outcomes of training programs. Comparing the sample characteristics across studies can provide insights into the applicability and generalizability of the findings to different nursing populations. Some literature review studies have examined the long-term impact of training programs on nursing practice. Comparing the short-term findings reported in the reviewed literature studies with long-term outcomes reported in other studies can provide a more comprehensive understanding of the sustained effects of training interventions. Different studies have utilized various evaluation methods, including objective assessments, clinical performance evaluations, and self-reported measures. Comparing the evaluation methods employed in the reviewed literature studies with those used in other studies can contribute to a broader understanding of the strengths and limitations of different evaluation approaches.

5.3 Limitations

- Despite the valuable findings of this study, it is important to acknowledge its limitations. One of the limitations is the small size of the sample, which may restrict the applicability of the findings . The study was conducted with a sample of 20 nurses, and while efforts were made to ensure diversity in terms of experience and departments, a larger and more diverse sample would give a more thorough grasp of the training program's effects.
- Another limitation is the reliance on self-reported data through the questionnaires. The accuracy and reliability of the responses may be influenced by various factors, such as social desirability bias or the participants' perception of the study objectives. Future research could consider incorporating objective measures or observational assessments to supplement self-reported data and provide a more comprehensive evaluation of the training program's effectiveness.
- Time Restrictions: Because of the study's time constraints, the training program's length and breadth may have been constrained . Nurses may require additional time and exposure to reinforce and apply the knowledge gained through training. A longer duration of the training program could have provided a better assessment of the sustained impact on nursing practice.
- Single Institution Setting: Because just one healthcare facility was involved in the study, the results may not be applicable to other facilities.
- Lack of Control Group: The study did not include a control group that did not receive the training program. Without a control group, it is challenging to attribute the improvements solely to the training program. Factors such as time, experience, or external influences may have contributed to the observed changes in knowledge and competence. Future studies could consider incorporating a control group to better assess the specific impact of the training program.
- Short-Term Follow-up: Without conducting a long-term follow-up, the study evaluated the training program's effects immediately after they were finished. It is possible that the initial improvements in knowledge and competence may diminish over time without ongoing reinforcement or refresher training. A longer follow-up period would provide insights into the sustainability of the training program's effects.

5.4 Strengths

- Despite the limitations, this study possesses several strengths. One strength is the use of a pre and post-training design, which allowed for a direct comparison of the participants' knowledge before and after the training program. This design provided valuable insights into the immediate impact of the training and demonstrated significant improvements in knowledge scores.
- Additionally, the comprehensive nature of the training program, covering various critical topics relevant to nursing practice, contributed to the strength of the study. By addressing specific areas of knowledge and competence, the training program targeted the identified needs of the nurses, enhancing their skills in those areas.
- The study employed a rigorous methodology, including the use of questionnaires, to assess the participants' knowledge and understanding. This approach enhances the reliability and validity of the findings, allowing for more robust conclusions to be drawn.

- The training program focused on practical skills and knowledge that are directly applicable to the nurses' daily practice. By addressing real-world challenges and emphasizing essential competencies, the study ensured that the training program was relevant and valuable to the participants' professional development.
- The study emphasized the interactive nature of the training program, actively engaging participants in various learning activities. This approach promotes active learning, knowledge retention, and practical application of the learned concepts, enhancing the overall effectiveness of the training.
- The study included qualitative techniques in addition to questionnaires, such as focus groups and interviews, to acquire in-depth information into the participants' experiences and perceptions of the training program. This mixed methods approach provided a more comprehensive understanding of the impact of the training beyond quantitative measures alone.
- The study monitored and ensured the fidelity of the training program implementation. By closely adhering to the training content, delivery methods, and evaluation criteria, the study ensured consistency and standardized the training experience across participants, minimizing potential confounding factors that could influence the results.

5.5 Implications for Practice

The findings of this study have important implications for nursing practice. The positive impact of the training program on nurses' knowledge and competence suggests that targeted and continuous training initiatives should be integrated into nursing education and professional development. By investing in ongoing training programs, healthcare organizations can empower nurses to deliver high-quality care, stay updated with the latest evidence-based practices, and enhance patient safety. Furthermore, the findings highlight the need for collaboration between healthcare institutions, nursing associations, and educational institutions to promote knowledge exchange, share best practices, and jointly develop training initiatives. This collaborative approach can ensure that training programs align with the evolving healthcare landscape and address the specific needs of nurses in different practice settings. Overall, the results of this study reinforce the importance of continuous education and training in nursing practice. By continually investing in the professional development of nurses, healthcare organizations can

Chapter 6: Conclusion

6.1 Summary of Findings

The results of this research study have shed important light on the efficacy of the nursing training programme. It was discovered through the study of pre- and post-training questionnaire results that the training programme had a beneficial effect on the participants' knowledge and understanding. The nurses' knowledge and competence in the particular areas covered in the training improved, as evidenced by the post-training questionnaire's mean scores being significantly higher than the pre-training scores..

6.2 Discussion of Implications

The implications of the research findings are significant for both the nursing profession and patient care. The increased knowledge and competence of nurses following the training

program can contribute to improved patient outcomes and safety. By enhancing their understanding of critical procedures, such as central line dressing changes and management of emergencies, nurses can provide more effective and efficient care, leading to better patient outcomes and reduced risks. Furthermore, the findings highlight the importance of ongoing training and professional development for nurses. Continuous education and training programs can help nurses stay updated with the latest evidence-based practices, guidelines, and technologies in their field. This may result in better treatment overall and a higher grade of nursing practise.

6.3 Recommendations

Based on the research findings, several recommendations can be made to further enhance nursing practice and education:

1. **Continuous Training:** It is recommended to implement regular and ongoing training programs for nurses to ensure their knowledge and skills remain up to date. This can be achieved through workshops, seminars, online courses, and other educational initiatives.
 2. **Tailored Training:** Identify specific areas of improvement or challenges faced by nurses in the clinical setting and design targeted training programs to address those needs. This approach can ensure that training is relevant and focused, maximizing its impact on nursing practice.
 3. **Collaboration:** Foster collaboration between healthcare institutions, nursing associations, and educational institutions to facilitate knowledge exchange, sharing of best practices, and joint training initiatives. This can create a supportive environment for continuous learning and improvement.
 4. **Evaluation:** Conduct regular assessments and evaluations of training programs to monitor their effectiveness and identify areas for improvement. This can help refine the content, delivery methods, and overall impact of the training initiatives.
- Incorporate Simulation-Based Training:** Integrate simulation-based training methods, such as high-fidelity mannequins or virtual reality simulations, into nurse training programs. These immersive experiences can provide realistic practice opportunities and enhance critical thinking, decision-making, and hands-on skills.
6. **Inter professional Training:** Promote inter professional training by involving healthcare professionals from different disciplines, such as physicians, pharmacists, and therapists, in collaborative learning experiences. This can foster a holistic understanding of patient care and improve teamwork and communication among healthcare providers.
 7. **Mentorship Programs:** Establish mentorship programs where experienced nurses can guide and support novice nurses in their professional development. Mentorship provides opportunities for knowledge transfer, skill-building, and emotional support, ultimately enhancing the overall competence and confidence of nurses.
 9. **Quality Improvement Initiatives:** Integrate quality improvement projects into your training programmes with an emphasis on increasing patient safety, lowering medical errors, and optimising your patients' overall health.. Training nurses in quality improvement

methodologies can empower them to actively contribute to organizational efforts in delivering high-quality care.

10 Research and Evidence-Based Practise: Encourage a research- and evidence-based practice-oriented culture. among nurses by providing resources and support for conducting research, critically appraising literature, and incorporating research findings into clinical decision-making. Encouraging nurses to engage in evidence-based practice can lead to continuous improvements in patient care and nursing practice

6.4 Conclusion

In conclusion, this research study has demonstrated the positive impact of a training program on nurses' knowledge and competence. The findings underscore the importance of continuous education and training in nursing practice, highlighting the potential for improved patient outcomes and enhanced quality of care. By investing in training and professional development opportunities for nurses, healthcare organizations can empower their staff to deliver high-quality care and stay abreast of the ever-evolving healthcare landscape. It is through such initiatives that nursing practice can continue to advance, leading to improved patient safety, satisfaction, and overall healthcare outcomes. Furthermore, this study highlights the significance of tailored training programs that address specific areas of improvement and challenges faced by nurses. By identifying and targeting these needs, organizations can maximize the effectiveness of training interventions and ensure the relevance of the content to real-world nursing practice. Additionally, the comparison with previous research emphasizes the consistency of findings across different studies, reinforcing the notion that training programs can have a positive impact on nurses' knowledge and competence. This collective evidence strengthens the support for ongoing investment in training initiatives within healthcare institutions. It is important to note, however, that this study is limited due to the small size of the sample and the reliance of self-reported data. Future research should aim to address these limitations by involving larger and more diverse samples and incorporating objective measures to supplement self-reported data. In conclusion, this study underscores the value of training programs in enhancing nursing knowledge and competence. By implementing continuous training, tailored interventions, and fostering collaboration and mentorship, healthcare organizations can create a conducive environment for professional growth and development. By prioritizing research, evidence-based practice, and quality improvement, nurses can actively contribute to improving patient outcomes and overall healthcare quality. Investing in the ongoing education and training of nurses is a vital step towards advancing nursing practice and ultimately providing the best possible care to patients.

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