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Aim of NIJ

To publish high-quality original research articles in the field of nursing that are novel and innovative in their findings that make substantial theoretical and practical advances in the nursing profession.

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From the Editorial's desk: "Need for innovations in nursing research approach for holistic health outcomes."

It is with great pleasure to present the current issue of the Nursing Innovators Journal (NIJ), an open-access, double-blinded, peer-reviewed international journal. NIJ brings together a diverse collection of scholarly research work from nursing that reflects the contemporary development, emerging evidence, and evidence-based practices within the fields of community health nursing, mental health nursing, obstetrical gynecological nursing, pediatric nursing, and medical surgical nursing in health sciences.

The present issue of the journal is unified by a central theme on innovations in nursing research, its interventions for holistic health outcomes, emphasizing the critical role of innovative educational strategies, evidence-based interventions, and holistic nursing care in addressing contemporary health challenges across the lifespan. The articles in this issue explore diverse dimensions of nursing practices, ranging from child and adolescent health, maternal and family care, clinical and surgical nursing, to elderly care from various nursing specialities. This issue highlights the impact of structured teaching programs, simulation-based learning, and evidence-based practice in achieving nursing excellence. Overall, these contributions pointed out the importance of preparing a competent, ethical, and empowered nursing workforce capable of responding to evolving healthcare needs at both national and global levels.

Recently, around the world, rapid changes are happening, from rising incidence of non-communicable diseases to unprecedented rises in mental health issues to the increased global life expectancy up to 74.5 years for males and 79.1 years for females in 2050, as projected by the United Nations. And from war-conflict-ridden countries, humanitarian crises, and greying populations to the latest developments in artificial intelligence and research advancements around the world, the scope for the caring science of nursing is huge. Conducting relevant nursing research that addresses such societal changes and issues through innovative research with a strong ethical background is a glaring need. Finding such articles has become an essential step in the dissemination of nursing research in today's academic journal world.

The concern rises when the nursing research is done for the sake of doing it, while innovation and methodological rigor are given a miss. With the threat for plagiarize content, and AI content mixed with it, the originality in research articles needs to be under strict scrutiny nowadays. As a nurse innovator, novelty must stay humane and use digital technology ethically and appropriately. The nursing researchers must be wary and alert to the lure of unethical research conduct in any form. The world is changing, with ever-evolving health care demand. Let's us put-up a discerning bird-eye view, and act to match the evolving researchable gaps beat by beat with humane innovations of caring that are culturally inclusive and sustainable ways. The need for conducting good, honest, need-based, innovative nursing research is a nonnegotiable and palpable fact.

NIJ and its editorial board are committed to providing genuine content for the readers that is based on authentic and original research and academic expertise. We ensure this commitment through our double-blinded peer-reviewed process and stringent SOP editorial process to bring out the issue of high-quality academic research based on methodology rigor and its findings for the profession and public at large.

The views and opinions expressed in the published articles are solely those of the authors and do not necessarily reflect the views of the editor, editorial board, publisher, or affiliated institutions. The journal assumes no responsibility for any consequences arising from the use of the published content. On behalf of the editorial team, I extend our sincere appreciation to all contributors and readers for their continued support.

Warm regards.

Prof. Laishangbam Bijayalakshmi Devi

Editor, Nursing Innovators Journal, MKSSSBTINE, Pune

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"Nursing Excellence in Education, Evidence, Ethics, and Empowerment"

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Abstract: *Nursing excellence represents the highest standard of nursing practice, characterized by quality education, clinical expertise, ethical and compassionate care, evidence-based decision-making, and leadership in health care environments. Achieving and sustaining excellence in nursing is essential for developing a high-quality workforce that enhances community health outcomes, improves patient care, ensures safety, and promotes a culture of continuous improvement. Nursing excellence is a multidimensional concept built upon four critical pillars. This paper examines the contributions of each component to professional nursing excellence, their measurement using models such as NAAC, NABH, and Magnet Recognition, and their impact on health care and nurse satisfaction. It also deals with strategies for integrating them into nursing education, practice, and leadership.*

Key words: *Nursing excellence, Education, Evidence, Ethics, and Empowerment.*

I. Introduction:

Nursing encompasses the autonomous and collaborative care of individuals of all ages, families, groups, and communities, whether sick or well, in all settings. Nursing includes promoting health, preventing illness, and caring for individuals who are ill, disabled, or experiencing end-of-life care (Womb to Tomb Care). Nurses perform direct care giving, evaluate its impact, advocate for patients and for health, supervise and delegate to others, lead, manage, teach, undertake research, and develop health policy for healthcare systems. Nurses are the first-line support for individuals of all ages, families, groups, and communities, whether they are sick or well, in all settings. Nursing is a 90% women-oriented profession.

Nursing is a profession dedicated to upholding everyone's right to enjoy their highest attainable standard of health, through a shared commitment to providing collaborative, culturally safe, people-centred care and services. Nursing acts and advocate for people equitable access to health and health care, and safe, sustainable environment. The practice of nursing embodies the profession's philosophy and values by providing professional care in the most personal health-related aspects of people's lives. Nursing promotes health, protects safety and continuity in care, and manages and leads health care organizations and systems. Nursing practice is underpinned by a unique combination of science-based disciplinary knowledge, technical capability, ethical standards, and therapeutic relationships. Nursing is committed to compassion, social justice, and a better future for humanity, ICN, 2025.[1]

Nursing excellence is essential to the delivery of safe, ethical, and high-quality healthcare. It is achieved through a combination of continuing education, the application of evidence-based practices, adherence to ethical principles, and the empowerment of nurses to act as leaders and advocates within healthcare systems. As the complexity of healthcare increases, a focused approach to cultivating these four areas becomes critical to ensure both patient and professional outcomes are optimized. "Advocacy, promoting a safe environment, conducting research, participating in shaping health policy, and managing patient and healthcare systems are also key nursing roles, as noted by the ICN 2002."[2]

II. Defining Nursing Excellence:

Nursing excellence can be defined as a consistent, high-quality nursing workforce delivering safe, evidence-based, and people-centred care. It involves a commitment to lifelong learning, professional development, and leadership. In India, the NAAC and NABH have formalised the concept of excellence in nursing education and patient care. In the USA, the American Nurses Credentialing Center (ANCC) has formalized this concept through the Magnet Recognition Program, which identifies healthcare organizations that demonstrate excellence in nursing practices and adherence to national standards for quality patient care.[3]

Key Components of Nursing Excellence include:

1. Quality Nursing Education: Equipping nurses with knowledge, skills, and attitudes for competent practice that involves critical and creative thinking with lifelong learning. Ongoing Professional Development through continuous education and credentialing that supports the advancement of nursing knowledge and skills, IOM, 2011.[4]
2. Evidence-Based Practice (EBP): Incorporating the best current evidence with clinical expertise and patient preferences, Melnyk & Fineout-Overholt, 2018.[5]
3. Ethics: Upholding values and principles in every aspect of care. Effectively practicing collaboration in the Interdisciplinary teamwork that ensures comprehensive, coordinated care delivery, Kornhaber et al., 2016.[6]
4. Empowerment through leadership, nurses at all levels are empowered to take leadership roles in improving practice environments and patient care, Sherman & Pross, 2010.[7]

Why do we need Excellence?

1. Build a strong and diverse workforce to improve global health.
2. As a group striving for excellence, it motivates members.
3. As an individual, it facilitates personal and professional growth.

1. Excellence in Nursing Education: The Foundation of Competent Practice

Education is the cornerstone of nursing excellence. It equips nurses with the knowledge and critical thinking skills necessary for competent practice. Lifelong learning ensures nurses remain up to date with scientific advancements, clinical guidelines, and technologies.[8] The **Institute of Medicine** (IOM) recommends that 80% of nurses hold a bachelor's degree or higher to improve healthcare outcomes.[9] Furthermore, advanced degrees (e.g., MSN, NP, PhD) enable nurses to lead research, inform policy, and shape practice environments. Continuing professional development (CPD) and specialty certifications are also linked to improved patient outcomes and enhanced clinical judgment (10). Investing in nursing education at all levels fosters a workforce that is responsive, skilled, and innovative.

Excellence in Nursing Education is achieved by:

1. Well-prepared administration & faculty
2. Student-centred, innovative, interactive curriculum
3. Engaged Students
4. Evidence-based teaching, learning, and evaluations
5. Quality resources
6. Recognition of expertise
7. A clear program standards & hallmarks that raise expectations.
8. Lifelong learning

Outcome of excellence in education:

1. Learners can think critically.
2. Having a mindset for curiosity, inquisitiveness and seek knowledge beyond the curriculum.
3. Able to improvise/ innovate with creativity & originality.
4. Ready to adapt & embrace change.
5. Have high commitment/integrity to learning.
6. Can display leadership.
7. Commit to lifelong learning.
8. Competent in skills

NAAC criteria for Evaluation of Excellence in Nursing Education:

NAAC stands for the National Assessment and Accreditation Council, an autonomous body under the University Grant Commission (UGC). It was established to evaluate and ensure the quality of higher education institutions in India. It evaluates educational institutions based on the following seven criteria, under which institutions voluntarily enrol every 5 years.

1. Curricular Aspects
2. Teaching-Learning and Evaluation
3. Research, Consultancy and Extension
4. Infrastructure and Learning Resources
5. Student Support and Progression

6. Governance, Leadership, and Management
7. Innovations and Best Practices

The NAAC grading system ranges from the highest grade, A++, to D, based on a cumulative grade point average (CGPA) out of 4.

Here are how the grades are structured:

A++ (CGPA: 3.76 – 4.00) – Exceptional performance

A+ (CGPA: 3.51 – 3.75) – Excellent quality

A (CGPA: 3.01 – 3.50) – Very good standard.

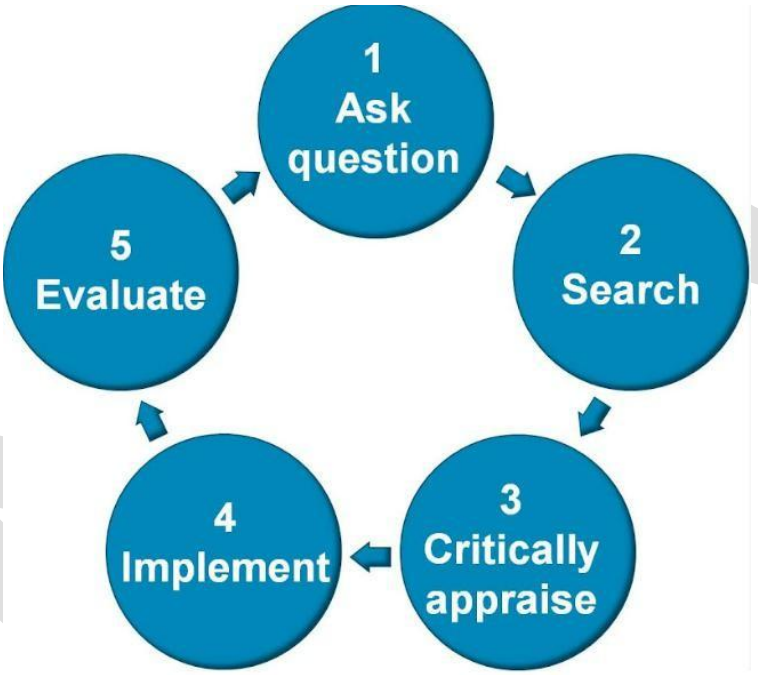
B++ to B (CGPA: 2.01 – 3.00) – Good to satisfactory

C (CGPA: 1.51 – 2.00) – Needs improvement

D (CGPA: ≤1.50) – Not accredited.

Every nursing education institute in India should strive to come under the ambit of NAAC to maintain excellence in nursing education.

2. Excellence in Research and Evidence-Based Practice: Applying Science to Care



EBP cycle for applying caring science.

In Master's and Doctoral programs in nursing, students are expected to conduct research. All nursing research conducted under recognized universities is archived in an online database called Shodh Ganga. This is a free database that is available to all. In hospitals, evidence-based nursing care is given. Evidence-based practice (EBP) combines clinical expertise, patient preferences, and the best available evidence to guide nursing care.[5] It improves clinical decision-making, decreases care variation, and enhances safety and quality. Nurses who regularly engage in EBP demonstrate better patient outcomes, including lower rates of hospital-acquired infections, shorter hospital stays, and fewer readmissions.[11] Organizations that promote EBP create cultures of inquiry, support data-driven decisions, and encourage participation in research and quality improvement initiatives. Despite its benefits, barriers such as time constraints, limited resources, and inadequate EBP training can hinder its application.[12] Therefore, educational initiatives and mentorship programs are crucial for supporting the implementation of EBP. The Indian Nursing Council, the apex body that oversees standardized nursing education nationwide, expects all nurses to possess these ten core competencies.

Accreditation Board for Hospitals Quality Indices for Clinical Care Excellence:

The National Accreditation Board for Hospitals & Healthcare Providers (NABH) is an agency that evaluates excellence in clinical care. It utilizes a set of quality indices, also known as Key Performance Indicators (KPIs), to monitor and enhance patient care, safety, and hospital management. These indicators cover multiple domains, including patient safety, clinical outcomes, operational efficiency, and infection control.

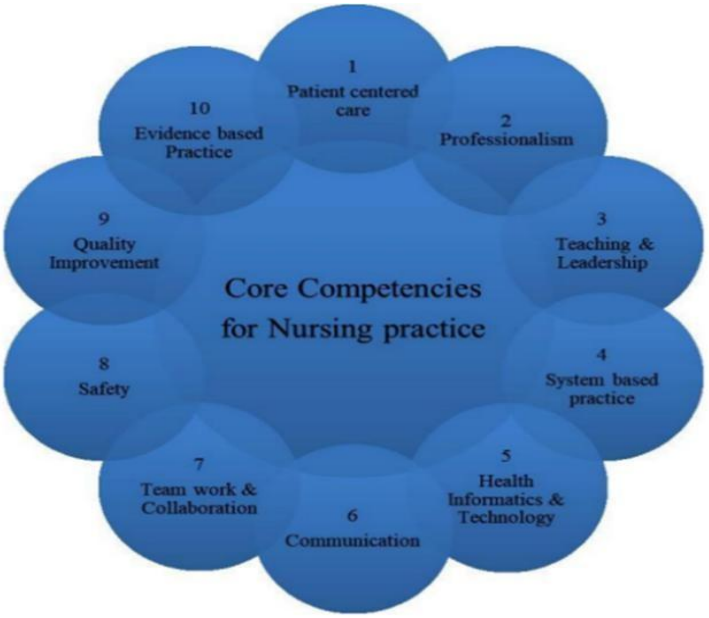


Figure 1. Core competencies for nursing and midwifery practice by B.Sc. Nursing Graduate {Adapted from NLN Model and Massachusetts: Nurse of the Future – Core Competencies (2016)}

Key indices include:

1. Patient Safety: Medication errors, adverse drug reactions, patient falls, near-miss reporting, and adherence to safety protocols.
2. Clinical Outcomes: Rates of hospital-acquired infections such as CAUTI, CLABSI, VAP, and surgical site infections; ICU mortality; unplanned returns to surgery.
3. Operational Efficiency: Waiting times for OPD consultation, diagnostics, and discharge; turnaround times for blood components; bed occupancy rates; nurse-to-patient ratios.
4. Infection control and safety: Hand hygiene compliance, needle stick injuries, and adherence to infection prevention protocols.
5. Monitoring these indicators enables hospitals to track their performance, identify areas for improvement, and implement corrective actions, thereby ensuring high standards of care and patient safety. The NABH mandates the regular measurement and reporting of these KPIs to maintain accreditation and promote continuous quality improvement.[13] Every care facility should come under the ambit of NABH to maintain care excellence.

3. Ethics: The Moral Compass of Nursing Practice:

Ethical principles underpin every aspect of nursing care. The **American Nurses Association** (ANA) Code of Ethics emphasizes values such as autonomy, beneficence, non-maleficence, and justice.[14] Nurses frequently encounter ethical dilemmas, particularly in end-of-life care, resource allocation, and patient advocacy. Ethical competence involves the ability to identify moral conflicts, reflect critically, and make decisions that uphold patients' dignity and rights.[15] Moral distress, which arises when nurses are constrained from acting on their ethical judgments, can compromise the quality of care and lead to burnout.[16] Institutions must support ethical practice by establishing ethics committees, promoting reflective practice forums, and implementing clear organizational policies. Ethics also involves professionalism in nurses. Professionalism is the conduct, aims, or qualities that characterize or mark a profession or a professional person. It involves adhering to professional standards, maintaining integrity, displaying accountability, and continuously striving for excellence in patient care.

Ethical values needed in Nursing:

- Compassion
- caring
- Integrity
- Respect
- Professionalism
- Confidentiality
- Punctuality
- Advocacy
- Accountability
- Excellence
- Collaboration
- Ethical decision making
- Cultural competency
- Kindness
- Prudence
- Perseverance
- Communication
- Self-awareness
- Self-efficacy
- Self-esteem
- Patience
- Fairness
- Inclusiveness
- Empathy
- Fidelity
- Honesty
- Transparency/ Openness
- Loyalty
- Dignity
- Self-reflection
- Resilience
- Truthfulness
- Dedication

In India, the Code of Ethics and Professional Conduct is given by the Indian Nursing Council. It is as follows:

Responsibility and Accountability of a nurse to self:

- Appreciates a sense of self-worth and nurture it.
- Maintains standards of personal conduct reflecting credit upon the profession
- Carries out responsibilities within the professional boundaries and its framework.
- Follow standard practice given by the Indian Nursing Council.
- Is accountable for own decisions and actions.
- Is compassionate.
- Is responsible for the continuous improvement of current practices.
- Provides adequate information to individuals that allows them to make informed choices.
- Practices healthful behaviour.

Professional Responsibility and Accountability of a Nurse to Nursing Practice:

- Provides care as per standards of practice and care.
- Treats all individuals and families with human dignity in providing holistic care i.e., physical, psychological, emotional, social, and spiritual aspects.

- Respects individuals and families in the context of traditional and cultural practices, promoting healthy practices and discouraging harmful practices.
- Presents a realistic picture truthfully in all situations for facilitating autonomous decision-making by individuals and families.
- Promotes individual and their families participate actively in their care.
- Ensure safe practice.
- Consults, coordinates, collaborates and appropriate follow up when individual care needs exceed the nurse's competence.

Communication and Interpersonal Relationships of a Nurse:

- Having good interpersonal professional relationship with individuals, families, and communities.
- Upholds the dignity of team members and maintains effective interpersonal relationships with them.
- Appreciates the nursing professional role of team members.
- Cooperates with other health team members to meets the needs of the individual, families, and communities at large.

Professional Responsibility and Accountability of a nurse in valuing human being:

- Takes appropriate action to protect individuals from harmful and unethical practices.
- Considers relevant facts while taking conscience decisions in the best interest of individuals.
- Provide platform and support individuals rights to voice out on issues affecting their health and welfare.
- Respects and supports choices made by individuals.

Professional Responsibility and Accountability of a Nurse in Management:

- Ensures appropriate allocation and utilization of available resources.
- Take active part in supervision and education of nursing students and other professional health care providers.
- Uses judgment in relation to individual competence while accepting responsibility.
- Facilitates a conducive work culture to achieve institutional objectives.
- Communicates effectively, following the appropriate channel, so communication.
- Participates in performance appraisal.
- Participates in the evaluation of nursing services.
- Take active part in policy making and its decision process through the application of the principle of equity and accessibility of services.
- Supports individual to identify their needs and sensitizes policy maker and fund provider for resource allocation.

Professional Responsibility and Accountability of a Nurse with Professional Advancement:

- Ensures the protection of human rights while pursuing the advancement of knowledge.
- Contributes to the development of nursing practice.
- Participates in determining and implementing quality care.
- Takes responsibility for updating own knowledge and competencies.
- Contributes to the core of professional knowledge by conducting and participating in research.[17]

Every nurse in India should be aware of and practice this code of conduct in their day-to-day practice. Ethical excellence is essential to maintaining the quality of the nursing profession. However, there are no indices to measure this.

4. Empowerment: Enabling Leadership and Advocacy:

Empowerment enables nurses to influence care delivery, participate in decision-making, and lead initiatives that improve health outcomes. Structural empowerment, a key component of the **Magnet Recognition Program**, refers to access to resources, support, and opportunities for professional growth.[18] Empowered nurses report higher job satisfaction, lower burnout rates, and better patient advocacy.[19] Shared governance models, leadership development programs, and recognition of professional contributions help build empowered work environments. Nurses empowered at the bedside and in boardrooms can drive policy changes, challenge inequities, and advocate for patient populations on a broader scale.

- Benefits of Evidence-Based Empowerment - leadership:
- Set clear goals that impact throughout from an organization's strategic direction to daily work.

- Objective decision making
- Culture of continuous learning
- Culture of inclusivity
- Flexibility / Adaptability
- Proactive management of risks.
- Prioritizing organizational and individual well-being
- Customer-driven.
- Consider the big/holistic picture.
- Having shared team spirit among team members and stakeholders.

Every nurse leader should possess personal mastery, financial management, human resource management, interpersonal effectiveness, caring, and systems thinking.

III. Measuring Empowerment Excellence: The Magnet Model

The Magnet Recognition Program is a gold standard for nursing excellence in empowerment. This model is actively used in the USA to evaluate care setups. Nurse leaders can use this to empower themselves and other nurses. It is based on five components:

1. Transformational Leadership
2. Structural Empowerment
3. Exemplary Professional Practice
4. New Knowledge, Innovations, and Improvements
5. Empirical Outcomes

Hospitals that achieve Magnet status often report better patient outcomes, lower mortality rates, higher nurse satisfaction, and reduced staff turnover. Stimpfel et al., 2020.[20] The Magnet model provides both a framework and a benchmark for organizations striving for nursing excellence. Research consistently shows a positive correlation between nursing excellence and patient outcomes. For example, Aiken et al. 2014,[11] found that Magnet hospitals had lower patient mortality and failure-to-rescue rates compared to non-Magnet hospitals. Quality nursing care reduces hospital-acquired infections, medication errors, and readmissions. Work environments that support excellence empower nurses, improve job satisfaction, and decrease burnout. Kelly et al. 2011.[17] Nursing excellence encourages autonomy, professional recognition, and career growth, which in turn promotes retention.

Challenges to Achieving Nursing Excellence:
Despite its benefits, achieving nursing excellence can be a challenging endeavour. Barriers include:

- Lack of commitment to quality
- Wanting short-term success over long-term perseverance
- Staffing shortages
- Burnout and moral distress
- Limited resources for professional development
- Resistance to change

Healthcare systems must address these challenges through supportive leadership, adequate staffing, and investment in nurse education and innovation.

IV. Future Directions: To sustain and advance nursing excellence, several strategies must be prioritized:

1. Leadership Development: Investing in nurse leaders at every level.
2. Technology Integration: Using digital tools to enhance care delivery and EBP.
3. Health Equity and Advocacy: Expanding the nurse's role in addressing social determinants of health.
4. Global Collaboration: Learning from international models and best practices.

The International Council of Nursing promotes excellence at all Levels of Nursing through the theme of – Our Nurses. Our Future. Its advice to all the member countries is:

- Protect and invest in the nursing profession.
- Urgently address and improve support for nurses' health and well-being by ensuring safe and healthy working conditions and respecting their rights.
- Advance strategies to recruit and retain nurses to address workforce shortages. Improve compensation for nurses to ensure fair and decent pay and benefits and uphold positive practice environments.
- Develop, implement, and finance national nursing workforce plans.
- Invest in high-quality, accredited nursing education programs to prepare more new nurses and advance career development for existing nurses.
- Enable nurses to work to their full scope of nursing practice by strengthening and modernizing regulations and investing in advanced nursing practice and nurse-led models of care.
- Recognize and value nurses' skills, knowledge, attributes, and expertise. Respect and promote nurses' roles as health professionals, scientists, researchers, educators, and leaders.
- Actively and meaningfully engage national nursing associations as critical professional partners in all aspects of health and social care policy, delivery, and leadership as the experienced and trusted voice of nursing.
- Protect vulnerable populations, uphold, and respect human rights, gender equity, and social justice. Place and uphold nursing ethics at the center of health systems' design and delivery.
- Appoint nurse leaders to executive positions of all health care organizations and government policymaking.[21]

V. Conclusion:
Nursing excellence is not a singular achievement, but a dynamic process rooted in continuous education, application of evidence, ethical conduct, and empowerment. These four pillars are interdependent and mutually reinforcing. To foster nursing excellence, healthcare educational institutions and organizations must invest in education, promote an evidence-based culture, uphold ethical standards, and empower nurses as leaders and advocates. Only through this integrated approach can the nursing profession fully realize its potential to transform the healthcare system. Nursing excellence is a dynamic and essential pursuit in modern healthcare. It encompasses quality education, clinical expertise, professional development, innovation, and leadership. Programs such as NAAC, NABH, and Magnet recognition provide a framework for achieving high standards of care. By overcoming barriers and fostering a culture of continuous improvement, healthcare organizations can ensure that nursing excellence translates into better outcomes for both healthcare systems and professionals.

VI. Recommendation: To achieve nursing excellence, institutions must strengthen the four pillars of education, evidence, ethics, and empowerment. Continuous education should foster critical thinking, integration of technology, and lifelong learning. Evidence-based practice must be integrated into decision-making to ensure the delivery of safe and effective care. Ethical principles should guide all professional actions, promoting integrity, compassion, and accountability. Empowerment

through leadership development, shared governance, and professional recognition enables nurses to influence policy and advocate for quality care. By nurturing these four pillars, nursing can evolve into a dynamic, knowledgeable, and morally grounded profession that drives excellence in healthcare and patient outcomes.

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"Actions needed for EBP in day-to-day practice to achieve Nursing Excellence."

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Abstract: *Evidence-Based Practice (EBP) represents a cornerstone of contemporary nursing excellence, integrating current best evidence with clinical expertise and patient values. Despite its recognized importance, numerous challenges impede the systematic implementation of EBP across various levels of nursing practice, from education to clinical settings. This article examines the current challenges faced by nursing students, clinical nurses, educators, leaders, and policymakers in implementing EBP, and proposes comprehensive strategies to overcome these barriers. Through a synthesis of recent research and practical insights, this article aims to provide actionable recommendations for fostering a culture of evidence-based nursing that enhances patient outcomes and advances healthcare standards.*

Keywords: *Evidence-Based Practice, Nursing Excellence, Healthcare Quality, Clinical Decision-Making, Nursing Education*

I. Introduction:

The integration of EBP in nursing at primary, secondary, and tertiary care and in education is instrumental in ensuring high-quality care and nursing excellence from students, nursing educators, clinical nurses, nursing leaders and policy makers. Despite its significance, there are multiple challenges faced by nursing professionals in implementing EBP in their day-to-day practice.

1. Identify current challenges of EBP to achieve quality and excellence in Nursing.

Few studies on challenges and strategies for implementing evidence-based practice show that there are many challenges for EBP implementation.

A study done by Maria Pitsillidou, Zoe Roupa, Antonis Farmakas, and Maria Noula on Factors Affecting the Application and Implementation of Evidence-based Practice in Nursing (2021). This study investigated the factors which influence the implementation of Evidence-Based Practice and their correlation with nurses' socio-demographic characteristics. The results showed that, according to the nurses, the biggest obstacle for the application of Evidence-Based Practice is the lack of authority/power to change care procedures (83.8%), followed by the view that the results were not applicable in the nurses' environment (81.5%). This study showed that there is a need to create opportunities for the use of Evidence-Based Practice by nurses.[1]

Exploring Evidence: A Challenge before Nurses of Today, by Stephy Sabu in India. (2021) This study review article presents the obstacles and the solutions towards the implementation of Evidence Based Practice among the nurses in India by merging the content and concept from a few sets of related articles by the experts. The barriers and challenges of conducting nursing research and communicating findings into practice. Results show that the nurses in many studies have reported very low response in practicing it in the clinical setting. The time has reached to frame out the nurse leaders as the leadership and administration play a key role in implementing EBP. The barriers that have been revealed must be recognized by the authorities concerned in India, thereby formulating a policy so that the nurses can experience the core competency in their work settings.[2]

Challenges and Strategies for Implementing Evidence-Based Practice in Nursing: A Systematic Review by LValizadeh, V Zamanzadeh, N Babaei, M Avazeh, Tabriz. (2020) The aim of this study was to summarize and report structurally the results of various studies conducted in this field to identify challenges and strategies for implementing evidence-based practice in nursing to develop effective and efficient guidelines. The result of the study showed that, most nurses are not familiar with the concept of evidence-based practice and there are several barriers in the way of nurses in

implementing evidence-based practice. To address the clinical challenges of nursing, health care managers and policymakers should plan to use nursing professors and graduate students with the support of nursing managers to guide nurses in the implementation of evidence-based practice and the development of protocols.[3]

II. The common challenges in above research studies among, students, educators, clinical nurses, leaders', and policy makers were:

1. **Less Awareness and Understanding and Limited EBP knowledge**: Many nurses may have limited exposure to EBP concepts. This lack of prior knowledge can make it challenging for them to understand and apply EBP principles. Many nursing programs do not adequately prepare students with the necessary skills to critically evaluate and apply research findings in clinical settings. Nurses may not be fully conscious of how EBP can be translated into better care and outcomes, thereby leading to a gap between knowledge and practice.
2. **Limited Access to Evidence-Based Resources:** Nurses often face challenges in accessing updated evidence-based resources, impacting their ability to integrate the latest research findings into their daily nursing practice.
3. **Access to Resources is Limited:** Nurses may face barriers in accessing reliable, up-to-date resources, including research articles, databases, and clinical guidelines. Limited access can hinder their ability to find and use high-quality evidence in their practice. Not all institutions have the infrastructure or subscriptions to comprehensive databases for scholarly articles and evidence necessary for informed decision-making. This scarcity of resources forces many nurses to rely on outdated practices or secondary sources.
4. **Research Literacy:** Developing research literacy skills, including the ability to critically appraise research studies, can be challenging for students, clinical nurses, educators. Understanding statistical methods, study design, and research terminology may require additional support and training.
5. **Perceived lack of relevance:** They may struggle to see the direct relevance of EBP to their clinical practice. Bridging the gap between theory and practice and demonstrating the impact of EBP on patient outcomes can be crucial for students, clinical nurses, educators, and leaders.
6. **Fear of making mistakes:** Nurses may fear making mistakes when implementing EBP, particularly if they feel unsure about their research or critical appraisal skills. Encouraging a supportive learning environment can help mitigate this fear.
7. **Technology Barriers:** Limited access to technology or unfamiliarity with digital tools for accessing and managing evidence may pose challenges in staying connected with the latest research.
8. **Cultural and language diversity:** Nurses often include individuals from diverse cultural and linguistic backgrounds. Language barriers and varying cultural perspectives on healthcare may impact students' ability to engage with evidence effectively.
9. **Clinical Environment Barriers:** Hospital policies, culture, and a resistance to deviating from standard procedures hinder the adoption of new evidence-based interventions.
10. **Information Overload:** With the growth of health and medical literature, nurses often experience information overload and find it difficult to stay updated with the latest evidence.

Challenges among students:

1. **Commitment:** The demands of a nursing program, including coursework, clinical hours, and other responsibilities, can create time constraints for students. Finding time to thoroughly engage with EBP, including conducting literature reviews and critically appraising evidence, can be challenging. The demanding workload in nursing programs may leave students with little time for self-directed learning and engagement with EBP concepts. Balancing academic requirements and EBP activities can be a significant challenge.
2. **Inadequate EBP integration in curriculum:** Inconsistencies in how EBP is integrated into the curriculum across different nursing programs can lead to variations in students' exposure and understanding. Some students may graduate with different levels of EBP proficiency.
3. **Faculty expertise:** Faculty members with varying levels of expertise in EBP may impact students' learning experiences. Students benefit from faculty who are well-versed in EBP and can effectively guide them in applying evidence to their practice.
4. **Assessment methods:** Assessment methods that do not effectively evaluate students' understanding and application of EBP may limit their motivation to fully engage with evidence-based activities.

Challenges among clinical nurses:

1. **Time constraints and responsibility-** The workload has kept our nurses away from having research thought. Due to shortage of nurses' workload increases. A double duty, nurse patient ratio is more, long duty hours etc.
2. **Resistance to change:** Nurses may be resistant to adopting new approaches, especially if they are accustomed to traditional, non-evidence-based practices. Overcoming resistance and embracing a culture of EBP can be a gradual process. A change in behavior and mindset is required to move past this resistance, which can only be achieved through consistent policy support, leadership endorsement, and recognition of the benefits of EBP to both patient and institutional well-being.

Challenges among Faculty: Nursing faculty members play a crucial role in fostering evidence-based practice (EBP) among nursing students.

1. **Responsibility and Time constraints:** Finding time to stay updated on the latest evidence, develop EBP-focused curriculum, and mentor students can be challenging due to teaching responsibilities, administrative duties, NAAC, AISHE, NIRF documentation and clinical commitments.
2. **Resistance to change:** within the faculty or institutional culture can impede the integration of EBP into the curriculum. Faculty members may be accustomed to traditional teaching methods and may resist adopting new, evidence-based approaches.
3. **Lack of institutional support**: including recognition, funding, and incentives for incorporating EBP into teaching, can discourage faculty from prioritizing evidence-based approaches.
4. **Integration into clinical experiences:** Bridging the gap between classroom learning and clinical practice is essential. However, faculty may encounter challenges in effectively integrating EBP principles into clinical experiences, where time constraints and different priorities may exist.
5. **Lack of Role modeling:** Faculty members who do not actively engage in EBP in their own practice may struggle to effectively model evidence-based behaviors for their students.
6. **Interdisciplinary collaboration:** EBP often requires collaboration with professionals from various disciplines. Faculty may face challenges in fostering interdisciplinary collaboration within the academic setting, which is essential for comprehensive healthcare education.

Challenges of Leaders:

1. **Lack of organizational/ institutional support**: including recognition, funding, and incentives for incorporating EBP into teaching, can discourage faculty from prioritizing evidence-based approaches.
2. **Management policies:** Strict management policy and no liberty making decision.
3. **Lack of funding:** Difficulty getting funding and resources to make changes with evidence-based approaches.
4. **Time constraints:** Time constraints due to other work priorities**.**

Challenges of policy makers

1. **Conflict of Interest:** They may face pressure from various stakeholders, including political interests, industry, and advocacy groups. Balancing conflicting interests can make it challenging to prioritize evidence-based decisions over other considerations.
2. **Political pressure:** Public opinion and elections can influence policy decisions, and this may affect the EBP implementation.
3. **Lack of Evaluation:** The absence of a systematic process for evaluating the impact of policies can hinder the identification of successful EBP initiatives and the ineffective practices.
4. **Short term focus:** Policy makers may prioritize short-term goals and outcomes over long-term benefits, making it challenging to implement evidence-based interventions that may require more time to show impact.
5. **Inadequate time:** Policy makers often work within tight timeframes, making it challenging to thoroughly review and consider a broad range of evidence before making decisions.
6. **Resistance to change:** Existing policies and practices, even if not evidence-based, may be deeply entrenched. Policy makers might encounter resistance to change from various stakeholders who are comfortable with the status quo.

III. Strategies to overcome challenges in daily practice to achieve quality and excellence in nursing:

Addressing these challenges requires a collaborative effort between policy makers, leaders, nursing educators, clinical nurses, educational institutions, and students themselves. Implementing strategies such as mentorship programs, targeted

EBP training and creating a supportive learning environment can contribute to overcoming these obstacles and promoting excellence in nursing education.

Strategies Suggested for Application to achieve quality and excellence in nursing at all levels:

1. Students:

a. **Integration of EBP in Curriculum-** Faculty members can mentor students interested in research, guiding them through the research process and providing support in developing and conducting research projects. This hands-on experience fosters a culture of inquiry and critical thinking among future nurses.
b. **Clinical experiences:** provide clinical experience along with clinical nurses, if they work closely with experienced nurses this allows them to observe and participate in evidence-based decision-making under the guidance of a mentor.
c. **Interactive Learning Methods:** Implement interactive learning methods, such as case-based learning, simulation exercises, and group discussions, think- pair- share, projects, game-based learning, flipped classrooms, collaborative learning etc. to engage students in the application of evidence to real-world scenarios.
d. **Teach Critical Appraisal Skills:** Develop and implement coursework that teaches students how to critically appraise research studies. Emphasize the importance of evaluating the quality and relevance of evidence in making informed clinical decisions.

2. Practicing Nurses:

a. Patient Advocacy
b. Data-Driven Care: Data from surveys, grievance/complaint management programs, and other sources can be used to define needs of patients, develop programs to address those needs, and monitor improvement.
c. Attending professional conference, seminars, and workshops: will help to upgrade their knowledge.
d. Clinical practice should be based on sound rationale.

E.g.: Overall bundle protocols- On assessment of data it is evident that practicing and continuous evaluation it is proven that bundle protocols as preventive measure helped to reduced infection rate

3. Nurse Educators:

a. **Incorporate research finding into the curriculum**- Curriculum Design
b. **Guidance & Mentorship**- Establish mentorship programs to pair experienced faculty members with those who are newer to EBP or research. Encourage peer support and collaboration, creating an environment where faculty members can learn from each other's experiences and successes.
c. **Incorporating Research into Teaching**: Nursing faculty members can integrate the latest research findings into their lectures and classroom discussions. This ensures that students are exposed to current evidence and understand how to apply it in clinical practice.
d. **Integration of Simulation and Case Studies:** Using simulation-based learning and case studies rooted in real-world scenarios can help nursing faculty apply evidence-based principles in teaching. These methods provide students with opportunities to practice clinical decision-making based on the best available evidence.
e. **Active Participation in Professional Organizations:** Joining and actively participating in professional nursing organizations allows faculty to stay informed about the latest research trends, attend conferences, and engage in discussions with colleagues. This exposure helps in incorporating the most recent evidence into teaching and practice.

4. Leaders:

a. Foster the climate to encourage reading/critical thinking and intellectual curiosity.
b. Offer support to staff.
c. Offer financial and other resources in support of research utilization.
d. Reward effort of research utilization
e. Establishing Policies
f. Resource Allocation
g. Quality Improvement

5. Policy Makers:

a. Evidence-Based Advocacy
b. Legislative Support

c. Public Awareness

6. Nurse Researchers:

a. Replicate studies.
b. Do high quality research.
c. Collaborate academic research along with practicing nurses and clinicians.
d. Disseminate results.
e. Communicate the results clearly.
f. Suggest clinical implication of findings.

7. Other Strategies:

a. **Educational Initiatives:** Implementing targeted educational programs to enhance the understanding and application of evidence-based practice among nurses and other healthcare professionals.
b. **Investing in Accessible Resources:** Strengthening infrastructure to ensure easier access to evidence-based resources, fostering a culture where the latest research is readily available for clinical use.
c. **Integrating EBP into Policies**: Encouraging the integration of EBP principles into institutional policies, creating an environment that supports evidence-based decision-making and practice.
d. **Educational Workshops:** Conducting workshops to educate nurses and healthcare providers about the importance and implementation of evidence-based practice.
e. **Knowledge Dissemination:** Establishing platforms for the dissemination of evidence-based knowledge through accessible and user-friendly means.
f. **Open Communication:** Promoting open communication channels to address queries and doubts related to evidence-based practice, fostering an environment of learning and collaboration.
g. **Addressing Cultural Norms:** Understanding and addressing the cultural norms and traditions that may influence the resistance to change within nursing practices.
h. **Leadership Role:** Empowering nursing leaders to champion the transition towards evidence-based practices within their respective healthcare settings.

IV. Conclusion:

It is evident that evidence-based practice is not merely a trend but the foundation for excellence in nursing. The future of nursing demands a robust commitment to EBP, as the healthcare landscape evolves rapidly with technological advancements and ever-changing patient needs.

There are 4 important Steps: Recall the crucial steps of EBP pivotal in its successful integration into nursing practice: Ask, Acquire, Appraise, and Apply.
There is 1 Goal: Remember that the goal of EBP is to improve nursing service and education outcomes through meticulous research and practical application.
There are 3 Strategies: Focus on overcoming the three common barriers: resistance to change, limited resources, and lack of knowledge.

Key Takeaways for implementation of evidence-based practices are as follows:

- **Think differently.**

Recognize that communicating cultural and organizational change is not enough; it is also important to communicate the "why" behind the change.

- **Plan differently**

Invest the time and resources it takes to hardwire new behaviour's and establish a culture built on accountability.

- **Act differently**

Work to align leadership and clinicians on the goals, behaviours and processes that best connect to the organization's mission of delivering exceptional patient care.
Achieving nursing excellence through evidence-based practice requires collaborative effort, sustained commitment, and strategic action from nursing students, clinical nurses, educators, leaders, policymakers, and researchers. By systematically addressing the identified challenges through the proposed strategies, the nursing profession can create environments where

evidence-based practice flourishes, ultimately enhancing patient outcomes and advancing the profession's contribution to healthcare excellence. The time for action is now, and the responsibility lies with each member of the nursing community to champion evidence- based excellence in their sphere of influence.

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"Effectiveness of structured teaching program on knowledge regarding malnutrition and nutritional practices among mother of under 0–5-year old children in selected urban areas."

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Abstract: *Malnutrition among children remains a major public health concern, particularly in urban communities where inadequate knowledge and poor nutritional practices among mothers contribute significantly to its prevalence. This study was conducted to evaluate the effectiveness of a structured teaching program on maternal knowledge of malnutrition and nutritional practices among mothers of children aged 0–5 years in selected urban areas of the city. A quantitative research approach was adopted using a one-group pre-test post-test design. The study sample consisted of 80 mothers of children under five, selected through a purposive sampling technique. Data were collected using a structured knowledge questionnaire on malnutrition. The pre-test was conducted prior to the implementation of the structured teaching program, followed by a post-test after the intervention. Descriptive and inferential statistics were used for data analysis. The findings revealed that before the intervention, the majority of mothers (55%) had average knowledge, while only 15% demonstrated good knowledge regarding malnutrition. The mean pre-test knowledge score was 9.75. After the structured teaching program, there was a significant improvement in maternal knowledge, with 60% of mothers achieving good knowledge levels in the post-test. The mean post-test score increased to 14.85. A paired t-test showed a highly significant difference between pre-test and post-test scores ($t = 12.87$, $p < 0.0001$). The study concluded that the structured teaching program was highly effective in improving maternal knowledge regarding malnutrition among children aged 0–5 years. Such educational interventions are essential for promoting better nutritional practices and preventing malnutrition in early childhood.*

Keywords: *Structured teaching program, Malnutrition, nutritional practices, mother, 0-5 years old children,*

I. Introduction:

"Children are the hands by which we take hold of heaven." **– Henry Ward Beecher** [1]

Malnutrition remains a major global public health concern and is a leading cause of morbidity, mortality, and developmental impairment among children under five, particularly in developing nations. In India alone, more than 80 million children are undernourished, with 5–10% suffering from severe forms such as marasmus and kwashiorkor. According to WHO (2020), 150 million children under five worldwide are stunted and 50 million are wasted, with a high burden in low-income urban settings. Maternal knowledge and feeding practices during the first 1,000 days of life play a critical role in shaping child nutritional outcomes. However, many mothers in low-resource urban areas lack awareness regarding optimal breastfeeding, complementary feeding, and early recognition of malnutrition. Structured educational interventions are therefore necessary to improve maternal knowledge and promote better nutritional outcomes. The present study evaluates the effectiveness of a structured teaching program on maternal knowledge regarding malnutrition among under-five children in selected urban areas.[2]

II. Background of the study:

Despite being largely preventable, malnutrition accounts for significant childhood mortality and lifelong consequences including impaired immunity, developmental delays, and reduced educational and economic potential. In India, approximately 75% of preschool children are undernourished and nearly half a million deaths annually are attributable to

nutritional deficiencies. Higher prevalence in urban slums is associated with poverty, poor dietary quality, food insecurity, inadequate sanitation, and limited maternal awareness. Although health services exist, many mothers lack adequate information to make informed feeding decisions. Strengthening maternal knowledge is therefore essential in addressing malnutrition at the community level.[3]

III. Need for the study:

Mothers are key decision-makers in infant and child feeding. Their knowledge directly influences nutritional status, growth patterns, and vulnerability to disease. In resource-constrained settings, lack of nutrition literacy contributes significantly to underweight, stunting, and wasting. Structured teaching programs offering practical, culturally suitable information have demonstrated effectiveness in improving maternal behavior and child health outcomes. This study investigates the impact of a structured teaching intervention with the intention of supporting its integration into community-based maternal and child health services.[4]

Research from Nigeria (Ayodeji et al., 2025) showed more than 90% of mothers had good awareness, while rural Indian studies (Priyanka Devi, 2024) reported inadequate knowledge among 76% of participants. Maternal knowledge was consistently associated with education, socioeconomic status, occupation, parity, and access to health information. Systematic reviews confirm that maternal education strongly predicts child nutritional outcomes and highlight an ongoing need for targeted nutrition education initiatives. Several studies from 2017–2025 using pre-test/post-test designs demonstrated significant improvement in maternal knowledge after structured educational interventions. Post-intervention gains were statistically significant across demographic groups (Pujari et al., 2025; Gupta, 2024; Upadhyay et al., 2023). Systematic reviews affirm that community-based and facility-based teaching programs improve awareness and promote recommended feeding practices, ultimately reducing the risk of protein-energy malnutrition.[5-8]

As the above literature indicated Effectiveness of structured teaching program on knowledge regarding malnutrition and nutritional practices among mother of under 0–5-year children The research statement was “A study to assess "Effectiveness of structured teaching program on knowledge regarding malnutrition and nutritional practices among mother of under 0-5year children in selected urban areas of the city". The objectives of the study were: 1. To assess the pretest knowledge level of malnutrition among mother of 0–5-year-old children. 2.To assess the post-test knowledge level of malnutrition among mother of 0–5-year-old children. 3.To compare pretest and post-test knowledge level of malnutrition among mother of 0- 5-year-old children.

IV. Research methodology:

A one-group pre-test post-test research design was employed to evaluate the effectiveness of a structured teaching program on improving mothers’ knowledge regarding malnutrition among children aged 0–5 years in selected urban areas of the city. The study was conducted in community settings, and the target population comprised mothers with children below five years of age. A non-probability purposive sampling technique was used to select 80 participants meeting the inclusion criteria. Data were collected using a demographic data sheet and a structured self-reported knowledge questionnaire. Following the pre-test assessment, the structured teaching program was administered, and a post-test was conducted to measure the change in knowledge levels after the intervention. The collected data were analyzed appropriately, and the study findings were communicated through standard academic channels. [9 - 11]

V. Result findings:

A total of 80 mothers of children aged 0–5 years participated in the study. Most mothers (53.75%) were between 20–25 years of age, and 40% were aged 26–30 years, indicating a predominantly young maternal population. More than half of the children (55%) were male. Family structure analysis showed that 53.75% of participants lived in joint families, while 38.75% lived in nuclear families. Most mothers (60%) had two children, while 26.25% had one child. With respect to education, 48.75% had primary education, 33.75% had secondary education, and 6.25% were graduates, while 11.25% were illiterate, reflecting a low level of higher educational attainment among mothers. Pre-test Knowledge Level Before the intervention, 55% of mothers demonstrated average knowledge regarding malnutrition, 30% had poor knowledge, and only 15% had good knowledge. The mean pre-test score was 9.75 (SD = 3.20), indicating limited baseline understanding and wide variation in awareness among participants. Post-test Knowledge Levels After administration of the structured teaching programme, knowledge scores improved substantially. A total of 60% of participants achieved good knowledge, 35% demonstrated average knowledge, and only 5% had poor knowledge. The mean post-test score increased to 14.85 (SD

= 2.85), reflecting improved understanding across the population. Effectiveness of the Intervention Comparison of pre- and post-test scores using a paired t-test revealed a statistically significant improvement in maternal knowledge ($t = 12.87$, $p < 0.0001$). This demonstrates that the structured teaching programme was effective in enhancing awareness about malnutrition among mothers of children aged 0–5 years.

Table 1. Frequency and Percentage Distribution of Pre-test Knowledge Scores (N = 80)

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Poor Knowledge	0 – 6	24	30%
Average Knowledge	7 – 13	44	55%
Good Knowledge	14 – 20	12	15%
Total		80	100%

Table 2. Frequency and Percentage Distribution of Post-test Knowledge Scores (N = 80)

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Poor Knowledge	0 – 6	4	5%
Average Knowledge	7 – 13	28	35%
Good Knowledge	14 – 20	48	60%
Total		**80**	**100%**

Table 3. Comparison of the Pre-test and Post-test Knowledge Level of Malnutrition Among Mothers of 0–5-Year-Old Children (N = 80)

Test	Mean Score	Standard Deviation (SD)	t-value	p-value	Interpretation
Pre-test	9.75	3.20			
Post-test	14.85	2.85	12.87	**< 0.0001**	**Significant improvement**

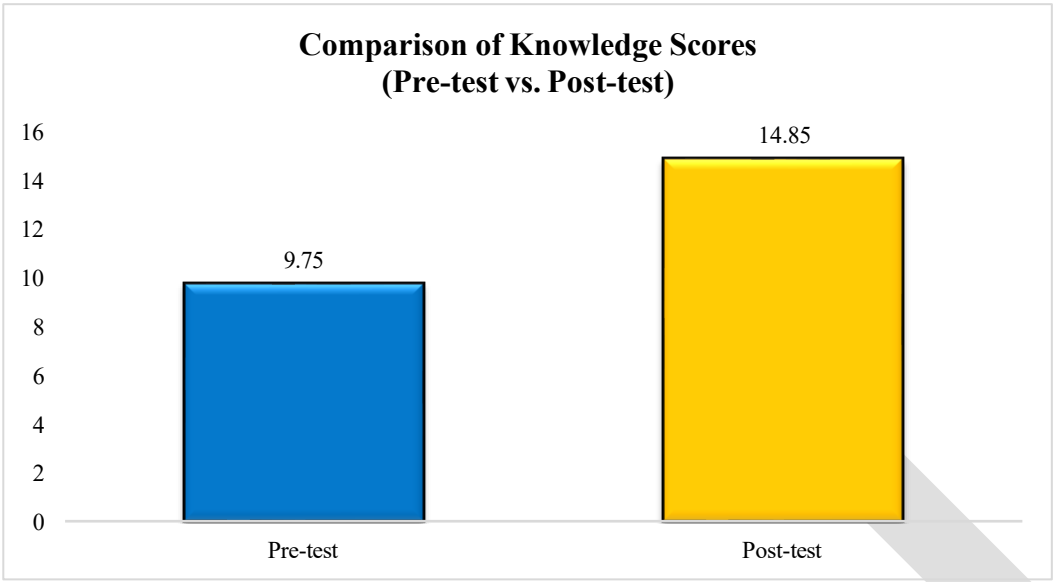

Fig. 1: Bar diagram showing Comparison of Knowledge Scores (Pre-test vs. Post-test)

IV. Discussion

The study evaluated the effectiveness of a structured teaching programme on improving maternal knowledge regarding malnutrition among mothers of 0–5-year-old children in an urban community. The findings demonstrated that most mothers had inadequate awareness before the intervention. In the pre-test, 55% of mothers had average knowledge, 30% had poor knowledge, and only 15% demonstrated good understanding. Similar baseline findings were reported by Pawar and Mendagudli (2019) and Singh et al. (2022), who also observed predominantly poor to average knowledge among mothers of under-five children.[12]

There was a significant improvement after the intervention in knowledge, with 60% of mothers achieving good knowledge, 35% average, and only 5% remaining in the poor category. This improvement is consistent with studies by Saharan (2022) and Frank et al. (2022), which also showed substantial knowledge gain after structured educational programmes.[13-14]

Statistical analysis confirmed the effectiveness of the intervention, with mean knowledge scores increasing from 9.75 to 14.85, and the observed t-value (12.87; $p < 0.0001$) indicating a highly significant difference. Similar statistically significant improvements were reported by Chaturvedi (2020), who also noted that demographic factors such as age, education, income, and prior awareness influenced baseline knowledge. Overall, the study concludes that structured teaching is an effective strategy for enhancing maternal knowledge on childhood malnutrition and can be a valuable component of community health education initiatives.[15-16]

V. Summary and conclusion:

The study found that inadequate maternal knowledge is a major cause of malnutrition among children aged 0–5 years in urban areas. Pre-test results showed that most mothers had only average or poor understanding of malnutrition, reflecting a clear gap in health awareness. After the structured teaching programme, a significant improvement in knowledge was recorded, proving the effectiveness of targeted education. Since mothers directly influence childcare, feeding practices, and early detection of nutritional problems, enhancing their knowledge is essential for preventing malnutrition.

The findings emphasize the need for continuous community-based health education, especially for mothers with lower education or socioeconomic status. Strengthening maternal awareness can support early prevention, improve child health outcomes, and help reduce malnutrition rates. Policies should promote regular teaching programmes, better access to nutrition services, and family support systems. Further research should examine social, economic, and cultural factors affecting maternal knowledge to strengthen public health strategies.

Ethical consideration: The research was conducted after the ethical committee approval, and informed consent was taken before data collection from the participants.

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Conflict of Interest: There is no conflict of interest to declare.

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"The effectiveness of prevention of home accident information booklet on the knowledge and attitude among mothers of under five years old children in selected urban community of Pune city."

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Abstract: *A descriptive study was conducted to assess the effectiveness of prevention of home accident information booklet on the knowledge and attitude among mothers of under five years children in selected urban community of Pune city. The objectives of the study were to analyses knowledge and attitude regarding the prevention of accidents in children under five years among mothers and to find out correlation between knowledge and attitude scores regarding home accidents and their prevention among mothers of children under five years. Material and method: The study utilized a quantitative research approach based on a quasi-experimental one-group pre-test–post-test design. The study population was mothers of under five years children in selected urban community of Pune city. A purposive sampling technique was adopted. The sample population consisted of 60 mothers of under five years children. The tool was prepared by using 3 sections as Demographic Data, structured knowledge-related questionnaire, and structured attitude-related questionnaire. Both descriptive and inferential statistical methods were employed for data analysis. Result showed that 48% of the subject were in the age group of 25-35 years mothers, 38% of the subjects were in the group having higher secondary and above education. Distribution of the subject according to the mother's occupation shows that 68% of the subjects were in the group having housewives. Distribution of the subject according to income shows that 68% of the subject were in the group having an income less than Rs 15000. 56% of the subjects were from a nuclear family. In posttest maximum 80% of subjects having excellent knowledge towards prevention of home accidents in children. The mean post-test knowledge score was significantly higher than the mean pre-test knowledge score. The mean attitude score of mothers in the pre-test was 36.34 ± 6.23, whereas in the post-test it increased to 41.7 ± 4.36. The calculated t-value (6.2, df = 49) with $p < 0.001$ indicates a highly significant difference between the pre-test and post-test scores. the information booklet on the prevention of home accidents was effective in significantly improving the mothers' attitudes. Conclusion: The study showed that there is a positive effect of an information booklet on the prevention of home accidents among mothers of children under five years. It is effective in improving the mother's knowledge and positively changing her attitude regarding the prevention of home accidents.*

Keywords*: Home accidents, Information booklet, Mothers, children under five years, urban community.*

I. Introduction:

Home accidents are the leading cause of injury and death among children under five years of age. Most of these incidents are preventable through increased awareness and the implementation of proper safety measures. Mothers, being the primary caregivers, play a crucial role in ensuring the safety of young children. Therefore, educating mothers about home accident prevention is essential for reducing the incidence of such accidents. Accidental injuries constitute a major public health problem worldwide. They are the most common cause of death in children over one year of age. Every year, they leave many thousands permanently disabled or disFig.d. In several developing nations, injuries account for a significant proportion of deaths in children between 1 and 5 years of age. Home accidents among children under five years are a significant global concern. Statistical data from various sources highlight the severity of this issue: Global Statistics: According to the World Health Organization (WHO), unintentional injuries cause more than 600,000 child deaths annually, with a large proportion occurring at home. Falls are the leading cause of non-fatal injuries in young children, contributing to 37.3 million cases requiring medical attention each year. Burns, drowning, poisoning, and choking are other major contributors to childhood morbidity and mortality. A study by the National Crime Records Bureau (NCRB, 2022) reported that home accidents account for 60% of unintentional injuries in children under five years. Burns account for 35% of paediatric emergency cases, followed

by falls (25%) and poisoning (15%). Lack of parental supervision and unsafe home environments were major contributing factors. Community-Based Studies: A research study conducted in rural and urban areas of India found that 70% of mothers lacked sufficient knowledge on home accident prevention. After educational interventions, knowledge scores improved by 40-60%, showing the effectiveness of planned teaching programs. In a similar study in Bangladesh, a structured home safety education program reduced accident rates by 50% over six months.[1-5]

II. Methodology:

The study design consists of a quantitative research study approach with a quasi-experimental design. The study population was mothers of under five years children in selected urban community of Pune city who have given their consent for the study voluntarily. A purposive sampling technique was adopted. The sample population consisted of 60 mothers of under five years children. The tool was prepared by using 3 sections as Demographic which includes age (in years), education, occupation, income, number of children, type of family, and source of information. Structured knowledge-related questionnaire consisted of multiple-choice and true/false questions covering the common types of home accidents in detail such as burn, fall, choaking, poisoning in children under five, causes, prevention strategies, emergency responses and first aid and structured attitude-related questionnaire consists of a 5-point Likert scale developed to assess the attitudes of mothers towards home accident prevention. The scale comprised statements that were phrased both positively and negatively. Responses ranged from "Strongly agree" to "Strongly disagree." The inclusion criteria's were participants should be mothers who were having children under five years of age and are willing to participate in research study and they should communicate in the Marathi and Hindi languages. Those mothers in health profession were excluded from the study.

III. **Results/ findings:**

The study analysis of baseline characteristics was done through descriptive statistics. It indicates that 48% of the subject were in the age group of 25-35 years, 36% of the subject were in the age group of 30- 35 years. Distribution of the subjects according to their child age group shows that 42% of the subjects were in the age group of 1-2 years, 26% of the subjects were in the age group of 2-3 years, 16% of the subjects were in the age group of 3-4 years. Distribution of the subject according to the mother's education shows that 16% of the subjects were in the group having illiteracy, 34% of the subjects were in the group having primary education, and 38% of the subjects were in the group having high secondary and above education. Based on mothers' occupation, 68% of the subjects belonged to the housewife group, and 68% of the subjects had a monthly income of less than 15,000 Distribution of the subject according to the number of children shows 30% of the subjects were in the group having 1 child, 60% of the subjects were in the group having 2 children, according to the type of family shows that 56% of the subjects were in the group having a nuclear family, 32% of the subjects were in the group having an extended family.

Table 1.: Frequency distribution and percentage of age of child in years

N = 60

Sr No	Age of child in years	Frequency	Percentage
1	0-1	8	16%
2	1-2	21	42%
3	2-3	13	26%
4	3-4	8	16%
5	4-5	0	0%

The data in table 1 shows that the under-five children were from age group of 1 to 2 years of age (42%) followed by 2 to 3 years old children (26%). None of the participants mother had a child between 4 to five years of age. It indicated that the participants have children who may be prone to home accidents.

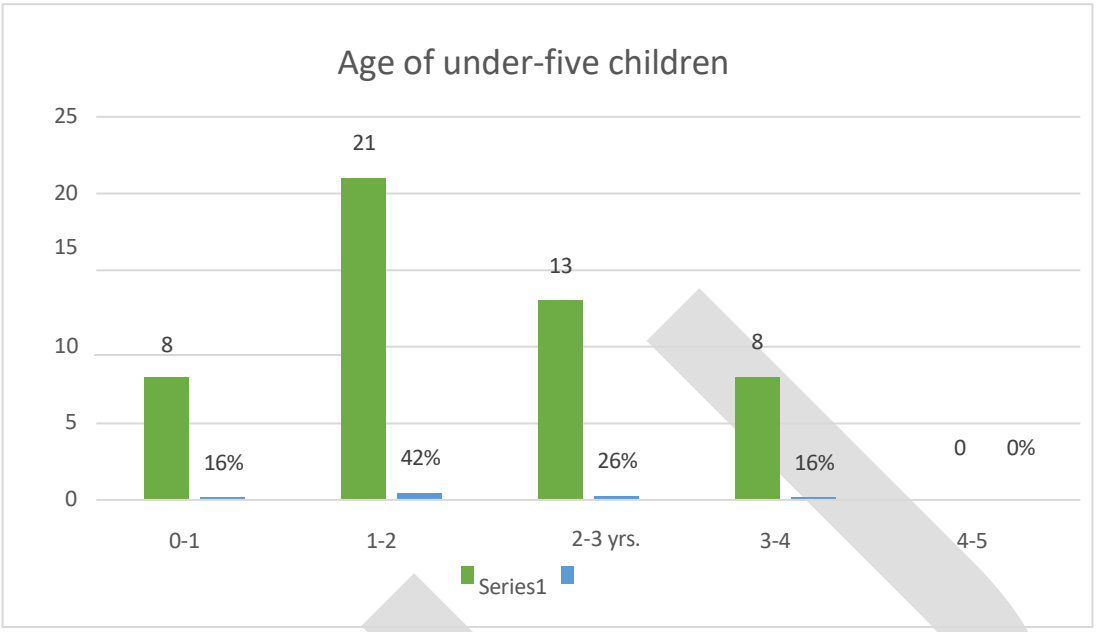

Fig 1: Bar diagram representing the frequency distribution of subject according to the age of the child in the year.

Table 2. Frequency distribution of Pre-test and post-test knowledge of prevention of home accidents.

Sr No	Range of scores	Grade	Pre-test frequency	Pre-test %	Post-test frequency	Post-test %
1	1to 5	Poor	15	30%	0	0%
2	6 to 10	Average	13	26%	0	0%
3	11 to15	Good	17	34%	10	20%
4	>15	Excellent	5	10%	40	80%

The data in the table 2 shows the knowledge level in pretest with 30% of participants having poor knowledge while 34% of participants had good knowledge and 10% of participants had excellent knowledge. In comparison to posttest after intervention of health teaching, the knowledge score of participants scores higher with excellent score among 80% of the participants, and 20% of good knowledge score among them.

This indicate that prevention of home accident information booklet on the knowledge was effective.

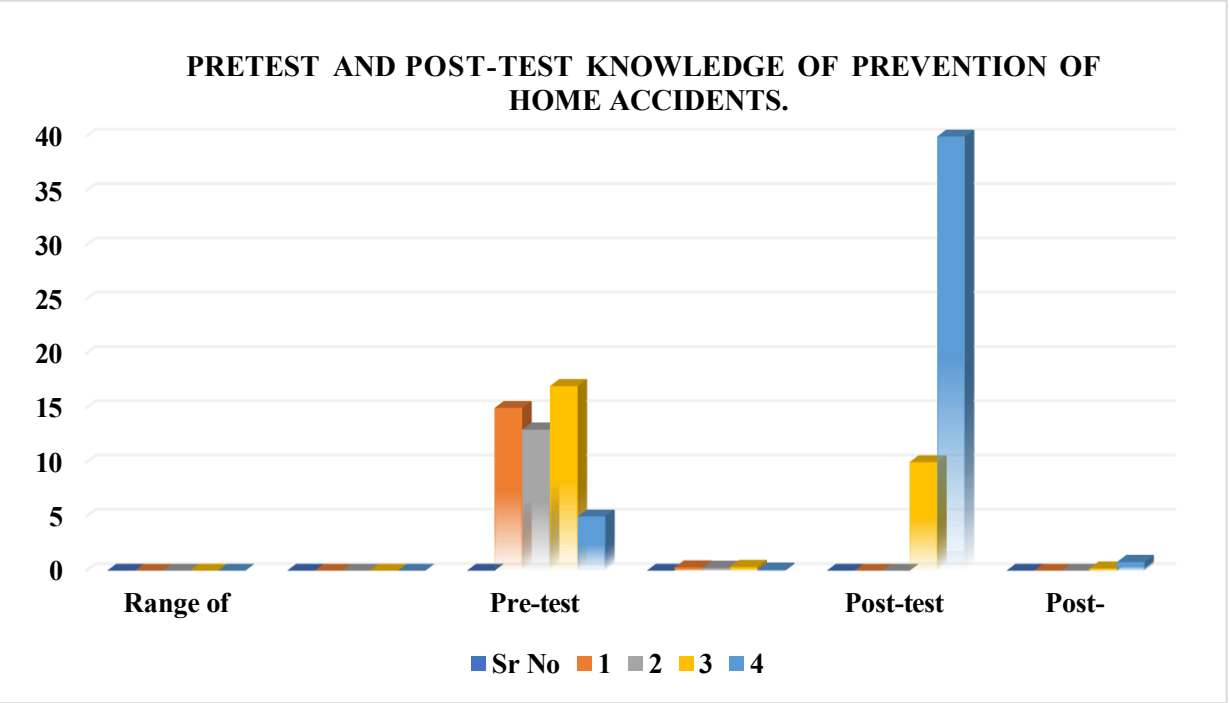

Fig 2: Bar diagram representing frequency distribution of pretest and post-test knowledge of prevention of home accidents.

Table 3: Frequency distribution of attitude categories toward the prevention of home accidents.

Sr No	Grade	Frequency	Percentage
1.	Positive attitude	34	68%
2.	Neutral attitude	14	28%
3.	Negative attitude	2	4%

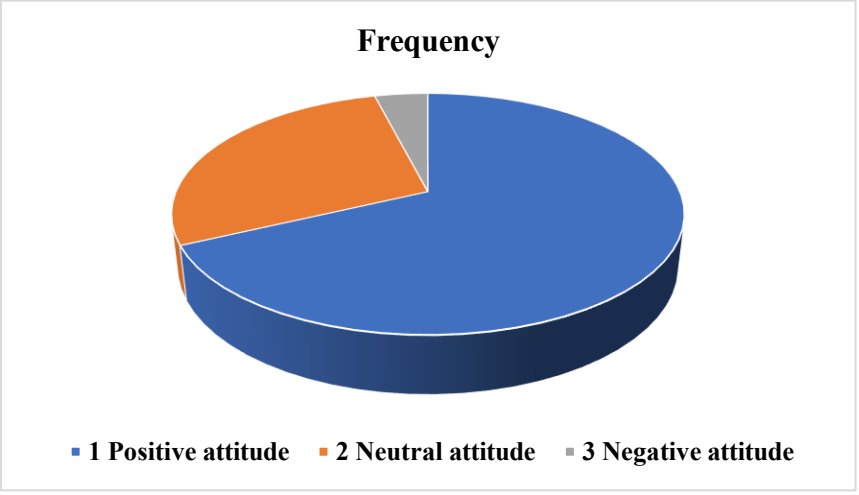

Fig. 3: Frequency distribution of attitude categories toward the prevention of home accidents.

Table 4: Paired t-test for the effect of the prevention of home accidents information booklet on the knowledge of mothers in the urban community.

	Mean	SD	T	df	p-value
Pretest	9.2	4.96	10.3	98	0.001
Posttest	17	2.7			

The findings of the study show the comparison of pre-test and post-test knowledge scores regarding the prevention of home accidents. The mean pre-test knowledge score was 9.2 (SD = 4.96), whereas the mean post-test knowledge score was 17.0 (SD = 2.0). The calculated t-value was 10.3 with degrees of freedom (df ≈ 98). The obtained t-value is much higher than the critical value at $p < 0.001$, indicating a highly significant difference between pre-test and post-test knowledge scores.

The results clearly reveal that the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score. This indicates that the administered information booklet on preventing home accidents was effective in enhancing the knowledge of mothers with under-five children.

IV. Discussion:

Children under 5 years of age home accidents account for half of unintentional deaths, because small children can easily choke on food or other small objects. They are inclined to put their mouths on common objects found around your house, such as plastic shopping bags and other safe materials. Burns and scalds represent an additional hazard and are more severe in children compared to adults, indicating that home accident prevention measures should focus on individuals at greatest risk. Parents should be motivated to know the risk factors of child injuries and the safety measures to be taken to prevent home accidents among children. This study evaluated the knowledge and attitude of mothers of under 5 years age children for prevention of accidents. The findings of the study implicated on other family members to assess their knowledge and attitude towards the prevention of home accidents in children under five years. A similar study conducted by NFH Al Abedi, T Zahraa Abdel Abbes, R Maha Salah, et al. (Medical & Clinical Research, 2023) examined the effectiveness of an awareness program on mothers' knowledge regarding household accidents among their children.[6]

The results of the study concluded that the majority of participants had poor knowledge about study topic in the pre-test, whereas all of them had good knowledge after being exposed to instructional sessions in the post-test. Additionally, no significant association was found between the overall assessment of mothers' knowledge regarding household accidents and their demographic characteristics, except for age and educational level. Where there was a significant association (0.05) with mothers' knowledge. Study conclusion was needs for special programs for mothers who have children of pre-school age about the most important domestic accidents, how to avoid their occurrence, and what are the most important measures necessary to manage them.

V. Summary and conclusion:

The study concludes that improved knowledge and positively changed attitude of mothers of under 5 years age children for prevention of accidents after the use of information booklet. The findings of the study implicated on other family members to assess their knowledge and attitude towards the prevention of home accidents in children under five years.

Ethical consideration: Permission was taken from ethical committee and informed consent taken from the participants.

Funding: Nil

Conflict of Interest: There is no conflict of interest to declare.

Acknowledgement: The authors would like to acknowledge and thank the participants and P.B.B. Sc. Nursing student for participating in this study.

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"Effectiveness of Video-Assisted Learning on Knowledge Regarding Sexual Health and Sexual Assault Among Adolescent Girls in Selected Schools."

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Abstract: Background: *Adolescent girls often have inadequate knowledge regarding sexual health and sexual assault, which increases their vulnerability to health risks and exploitation. School-based educational interventions using audiovisual methods may enhance understanding and retention of sensitive health information.[8,14]* ***Objective****: To evaluate the effectiveness of video-assisted learning on knowledge regarding sexual health and sexual assault among adolescent girls.* ***Methods****: A pre-experimental one-group pre-test post-test design was adopted. Seventy-six adolescent girls were selected from selected schools using non-probability purposive sampling. Data were collected using a* ***structured knowledge questionnaire consisting of 20 multiple-choice questions*** *related to sexual health, reproductive changes, menstrual hygiene, safe practices, sexual assault awareness, prevention strategies, and support services (score range: 0–20). The tool was* ***validated by experts*** *in nursing and community health, and* ***reliability was established using KR-20(r=0.78)****. A* ***45-minute video-assisted learning session*** *was administered after the pre-test. The* ***post-test was conducted seven days after the intervention*** *using the same questionnaire. Data were analysed using descriptive statistics and paired t-test.* ***Results****: The mean pre-test knowledge score was* ***11.25 ± 2.45****, indicating a moderate level of baseline knowledge. The mean post-test score increased significantly to* ***16.80 ± 1.95****. The* ***mean difference was 5.55****. Paired t-test analysis showed a* ***highly significant improvement in knowledge*** *t (75) =* ***18.5****, p < 0.001).* ***Conclusion****: Video-assisted learning was found to be highly effective in improving knowledge regarding sexual health and sexual assault among adolescent girls. Incorporation of structured multimedia-based sexual health education programs in schools is strongly recommended.*

Keywords: *Adolescents, Sexual Health, Sexual Assault, Video-Assisted Learning, Knowledge.*

I. Introduction:

Adolescence is a critical developmental period marked by rapid physical, psychological, and social changes. For adolescent girls, this phase includes significant reproductive and sexual maturation, which necessitates accurate knowledge regarding sexual health, menstrual hygiene, and personal safety. Adequate sexual health education empowers adolescents to make informed decisions, practice healthy behaviours, and protect themselves from exploitation and abuse.[10-11] However, discussions related to sexual health and sexual assault often remain sensitive and stigmatized, particularly in developing countries like India.[4,19] Cultural taboos, limited communication with parents and teachers, and inadequate school-based education contribute to insufficient knowledge among adolescent girls.[19-20] As a result, many girls remain unaware of normal bodily changes, safe practices, consent, and available support systems, increasing their vulnerability to sexual health problems and sexual violence.[7-8]

Sexual assault among adolescents is a growing public health concern. Lack of awareness about personal boundaries, preventive strategies, and reporting mechanisms often leads to underreporting and delayed help-seeking behaviour.[8,11] Schools serve as an ideal setting for providing structured and age-appropriate education to address these issues.[6,8] Innovative teaching strategies are needed to communicate sensitive topics effectively and ensure better understanding and retention of information.

Video-assisted learning is an audiovisual teaching method that combines visual and auditory stimuli, making learning more engaging and comprehensible.[14,16] It has been shown to improve attention, retention, and comprehension, especially among adolescents. Therefore, the present study was undertaken to evaluate the effectiveness of video-assisted learning in improving knowledge regarding sexual health and sexual assault among adolescent girls in selected schools.

II. Background of the study:

Globally, adolescents constitute a significant proportion of the population, and adolescent girls face unique sexual and reproductive health challenges.[1,12] According to the World Health Organization, many adolescents lack access to comprehensive sexual health education, leading to increased risks of sexually transmitted infections, unintended pregnancies, and sexual abuse. In India, the situation is further compounded by sociocultural norms that restrict open discussions on sexual health.[1-3]

Studies have revealed that a considerable number of adolescent girls possess limited or inaccurate knowledge regarding reproductive health, menstrual hygiene, and sexual assault prevention. This knowledge gap can negatively affect their physical health, emotional well-being, and overall quality of life. Furthermore, lack of awareness about sexual assault, consent, and legal rights often prevents adolescents from recognizing abusive situations and seeking timely support.

School-based educational interventions play a crucial role in bridging this knowledge gap. Traditional lecture methods may not be sufficient to address sensitive topics effectively. Video-assisted learning offers a learner-centred approach that can simplify complex concepts, present real-life scenarios, and encourage better understanding without embarrassment or fear.

Previous research has demonstrated that audiovisual teaching methods significantly enhance knowledge levels among adolescents on various health topics. However, limited studies have focused on the combined aspects of sexual health and sexual assault awareness among adolescent girls using video-assisted learning.[7,17] Hence, this study was conducted to assess the effectiveness of a structured video-assisted learning program in improving knowledge regarding sexual health and sexual assault among adolescent girls in selected schools.

III. Methodology:

Research design: The research design was pre-experimental one-group pre-test post-test design.

Sample: Sample size was 76 adolescent girls**.** The sampling technique employed was non-probability purposive sampling technique.

Tool Description Structured knowledge questionnaire were used as follows:

- 20 multiple-choice questions
- Score range: 0–20
- Content areas:
    - Sexual health
    - Reproductive changes
    - Menstrual hygiene
    - Safe practices
    - Sexual assault awareness and prevention
    - Support services
- **Validity:** Content validity were established by subject experts in the field.
- **Reliability:** KR-20 = 0.78

Intervention: The intervention is a video-based content for a duration of 45-minute video-assisted learning session among the participants. Pre-test was given immediately followed by video-assisted learning session (VAL) intervention. Post-test was taken after 7 days.

The intervention for the present study consisted of a structured video-assisted learning programme designed to improve knowledge regarding sexual health and sexual assault among adolescent girls. The video-assisted learning session was developed by the investigator based on a review of relevant literature, expert guidance, and adolescent health education guidelines.

The duration of the intervention was 45 minutes**,** and it was conducted in a classroom setting using audiovisual equipment. The content of the video was age-appropriate, culturally sensitive, and presented in simple language to ensure comprehension by adolescent girls. The video incorporated visual illustrations, animations, and explanatory narration to enhance understanding and maintain attention.

The video content was organized into the following components:

- Overview of adolescence and sexual health
- Physical and reproductive changes during adolescence
- Menstrual hygiene practices and myths

- Safe and healthy practices related to personal hygiene and body safety.
- Concept of sexual assault, types, warning signs, and consequences
- Preventive strategies, personal safety skills, and importance of consent
- Information on reporting mechanisms, available support services, and helplines

The intervention was administered immediately after the pre-test. During the session, participants were encouraged to observe attentively, and clarification was provided by the investigator at the end of the session to address doubts and reinforce key messages. No printed materials were distributed to avoid external learning influences.

The video-assisted learning programme aimed to create a safe and non-threatening learning environment, allowing participants to gain knowledge on sensitive topics without discomfort or hesitation. A post-test was conducted seven days after the intervention using the same structured knowledge questionnaire to evaluate the effectiveness of the video-assisted learning programme.

IV. Results finding:

Effectiveness of Video-Assisted Learning: A paired *t*-test was used to compare pre-test and post-test knowledge scores to determine the effectiveness of the video-assisted learning intervention.

Table 1: Comparison of Pre-Test and Post-Test Knowledge Scores (N = 76)

Test	Mean	SD	Mean Difference	*t* value	*p* value
Pre-test	11.25	2.45			
Post-test	16.80	1.95	**5.55**	**18.5**	**< 0.001**

The table 1 shows a substantial increase in the mean knowledge score after the video-assisted learning intervention. The paired *t*-test indicates a highly statistically significant improvement ($p < 0.001$), confirming the effectiveness of the intervention.

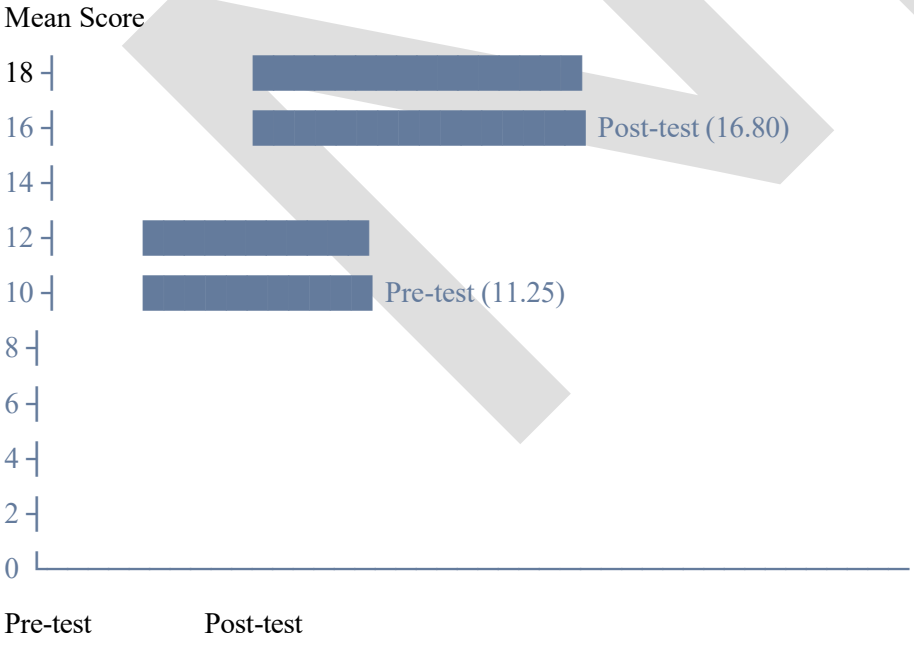

Fig. 1: Mean Pre-Test and Post-Test Knowledge Scores

Interpretation of Fig.: The bar graph clearly demonstrates a marked improvement in post-test knowledge scores compared to pre-test scores. The higher post-test mean obtained seven days after the intervention reflects effective knowledge acquisition and short-term retention.

Detailed Paired *t*-Test Findings**:** The mean pre-test knowledge score of 11.25 ± 2.45 indicated moderate baseline knowledge among adolescent girls. After the video-assisted learning intervention, the mean post-test score increased to 16.80 ± 1.95, showing a considerable improvement. The mean gain of 5.55 points in knowledge was found to be highly statistically significant ($t(75) = 18.5$, $p < 0.001$).

This significant difference confirms that the improvement in knowledge was not due to chance and can be attributed to the effectiveness of the video-assisted learning program. The post-test conducted after seven days further indicates effective short-term knowledge retention.

V. Implications of the study:

For Nursing Practice

- Nurses can organize workshops, awareness programs, and counseling sessions on sexual health in schools and communities.
- Serve as resource persons for adolescents, providing guidance and promoting safe practices.

For Nursing Research

- Provides a foundation for larger studies on sexual health education and its impact on attitudes and practices.
- Encourages exploration of multimedia learning methods and peer education strategies.

VI. Recommendations: The researchers recommend the following-

1. Conduct similar studies with larger sample sizes for broader generalization.
2. Integrate structured sexual health education in school curricula using multimedia tools.
3. Organize community-level awareness programs such as street plays, camps, and mass media campaigns.
4. Explore the relationship between knowledge, attitudes, and practices among adolescents.
5. Encourage adolescents to share knowledge with peers and family members to extend the impact.

VII. Limitations:

1. Small sample size limits generalizability.
2. Time constraints restricted the duration of data collection and intervention.
3. Study focused only on knowledge; attitudes and practices were not assessed.

VIII. Discussion:

The findings of the present study demonstrate that video-assisted learning is an effective educational strategy for improving knowledge regarding sexual health and sexual assault among adolescent girls. The moderate pre-test knowledge level highlights existing gaps in adolescent sexual health education. The significant increase in post-test scores supports previous studies that emphasize the effectiveness of audiovisual teaching methods in enhancing comprehension and retention of sensitive health topics. School-based video-assisted education, facilitated by nurses and educators, can play a vital role in empowering adolescents with essential knowledge.

IX. Conclusion:

Video-assisted learning significantly improves knowledge regarding sexual health and sexual assault among adolescent girls. Integrating structured multimedia-based sexual health education programs into school curricula is strongly recommended to promote awareness, safety, and informed decision-making among adolescents.

Ethical Considerations: Approval of the ethical committee and informed written consent were obtained from the participants before data collection by the researcher.

Funding: Nil

Conflict of Interest: There is no conflict of interest to declare.

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"A Study to Assess the Effectiveness of a Planned Teaching Programme on Knowledge Regarding Burns and Their Management Among Nursing Students in Selected Nursing College in Pune city."

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Abstract: *Burns are a major public health problem in India, contributing significantly to morbidity, disability, and mortality. Adequate knowledge regarding burn prevention, first aid, and management is essential for nursing students, who play a crucial role in emergency and clinical care. This pre-experimental study aimed to assess the effectiveness of a Planned Teaching Programme (PTP) on knowledge regarding burns and their management among IV semester B.Sc. Nursing students in a selected nursing college in Pune. A total of 48 students were selected using purposive sampling. The knowledge was evaluated through a structured questionnaire that included 30 multiple-choice questions The mean pre-test knowledge score was 12.4 ± 3.1, which significantly increased to 23.6 ± 2.8 in the post-test. The calculated paired t-value ($t = 18.92$, $p < 0.001$) indicated a statistically significant improvement in knowledge following the intervention. The findings confirm that the Planned Teaching Programme was effective in enhancing students' knowledge regarding burns and their management. Continuous educational reinforcement is recommended to improve competence in burn care.*

Keywords: *Burns, Nursing students, planned teaching programme, Burn management, Knowledge assessment.*

I. Introduction:

Burn injuries are among the most devastating forms of trauma, leading to severe physical, psychological, and social consequences. Globally, burns account for a substantial burden of injury, particularly in low- and middle-income countries. In India, an estimated 6–7 million burn cases occur annually, many resulting in prolonged hospitalization, disability, or death. Burns may result from flame exposure, scalds, chemicals, electricity, and radiation. Common complications include hypovolemic shock, infection, contractures, scarring, and long-term functional impairment. Early assessment, appropriate first aid, fluid resuscitation, wound care, and aseptic practices are critical in preventing complications and improving outcomes. Nurses are frontline healthcare providers in burn management; therefore, nursing students must possess adequate knowledge and skills related to burn prevention, classification, first aid, emergency management, and rehabilitation. However, studies have consistently reported gaps in knowledge among nursing students and caregivers.[2-3] A study conducted in Indonesia reported that 91% of caregivers lacked adequate first-aid knowledge for burns, but knowledge improved significantly following a structured teaching programme (Rahman et al., 2022).[4] Priya and Lakshmi (2021) found significant improvement in post-test knowledge among nursing students in Bihar after an educational intervention on burn first aid.[5] Similarly, Verma (2021) reported enhanced post-intervention knowledge scores following structured teaching on emergency burn management in Uttar Pradesh.[6] An Egyptian study by Ahmed et al. (2020) also demonstrated significant improvement in nurses' knowledge after training in burn units.[1] These findings highlight the need for structured educational interventions, thereby justifying the present study.

II. Objectives of the study:

1. To assess the pre-test knowledge regarding burns and their management among nursing students.
2. To administer a Planned Teaching Programme on burns and their management.
3. To assess the post-test knowledge following the intervention.
4. To determine the effectiveness of the Planned Teaching Programme.

III. Methodology:

A quantitative evaluative research approach was adopted using a pre-experimental one-group pre-test post-test design. The study was conducted in a selected nursing college in Pune.

Sample and Sampling Technique: The sample consisted of 48 IV semester B.Sc. Nursing students selected through purposive sampling.

Research Tool: Data were collected using a structured knowledge questionnaire consisting of 30 multiple-choice questions covering:

- Types and causes of burns.
- Classification and assessment
- First aid and emergency management
- Fluid management
- Wound care and aseptic techniques
- Complications and rehabilitation

Each correct answer carried one mark, with a maximum score of 30. Knowledge levels were categorized as inadequate, moderately adequate, and adequate. The tool was validated by subject experts, and reliability was established using the split-half method ($r = 0.82$).

Intervention Planned Teaching Programme: The Planned Teaching Programme was conducted for 45 minutes using lectures, PowerPoint presentations, charts, and discussion. The content included causes of burns, first aid, assessment, fluid resuscitation, wound management, prevention of infection, complications, and rehabilitation.

Data Analysis: Data were analysed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (paired *t*-test) to assess the effectiveness of the intervention.

IV. Results:

The findings revealed that in the pre-test, most students had inadequate knowledge regarding burns and their management. The mean pre-test knowledge score was 12.4 ± 3.1. After the Planned Teaching Programme, the mean post-test score increased to 23.6 ± 2.8. The calculated paired *t*-value ($t = 18.92$, $p < 0.001$) indicated a statistically significant improvement in knowledge.

Demographic data were summarized in a single table to avoid unnecessary repetition of Fig.s.

Table 1: Comparison of one group Pre-test & Post-test Mean Knowledge Scores

N = 48

Test Type	Mean Score	SD	N
Pre-test	13.04	4.21	48
Post-test	24.20	3.86	48
Mean Difference	11.16	–	–

Table 2: Effectiveness of Intervention (Paired t-test)

N = 48

Comparison	t-value	Significance
Pre vs Post	18.26	$p < 0.05$

The data in the above table 1 and 2 indicated that the teaching programme were significant in improving the knowledge regarding burns and their management among participants with $p < 0.05$ and t-test = 18.26. Hence, planned teaching programme is effective for burn management.

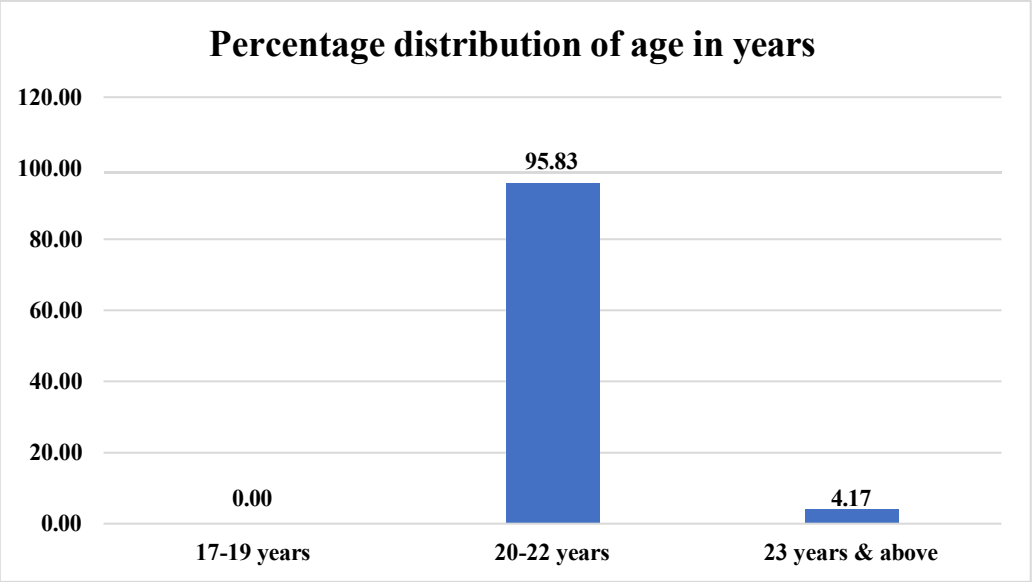

Fig. no 1 showing frequency distribution of age.

The above Fig. no 1, shows regarding age and majority of the samples 46(95.83%) belong to the age group of 20-22 years, 2(4.17%) belong to 23 years and above years, and none of the sample were 17-19 years of age group.

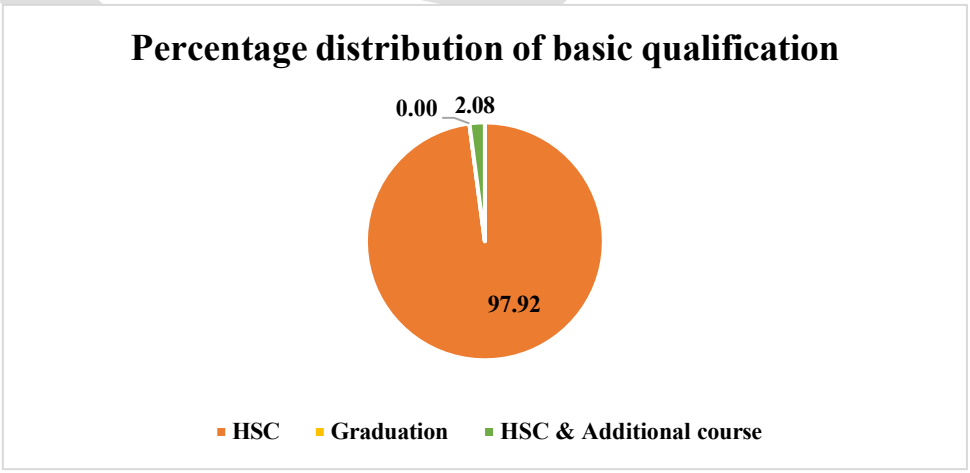

Fig. no 2 showing distribution of basic qualification.

Fig. no 2 illustrates regarding basic qualification and majority of the samples 47(97.92%) were HSC passes education, 1(2.08%) were educated HSC and additional education and none of the sample was graduated.

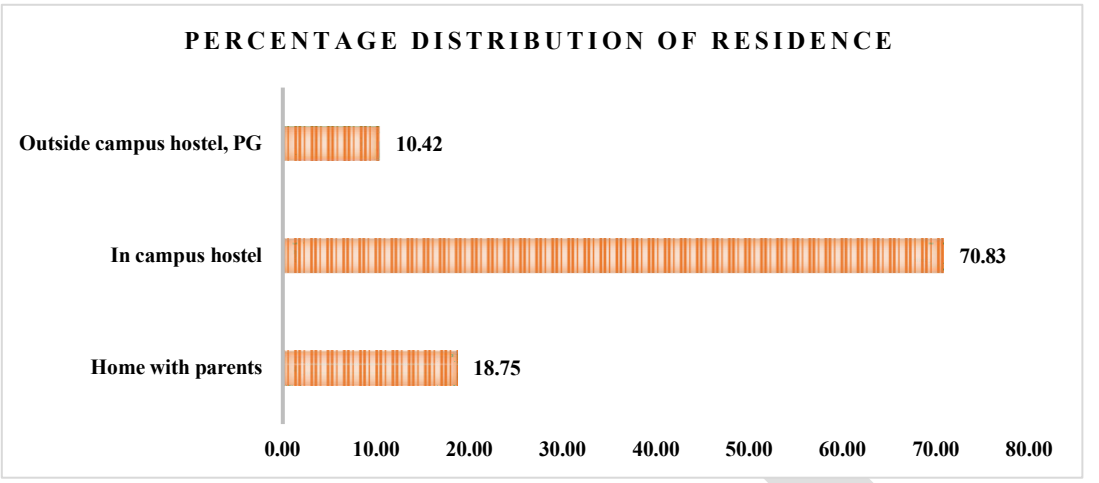

Fig. no 3 showing distribution of residence.

Fig. no 3 shows regarding residence, majority of the samples 34(70.83%) were residing in the campus hostel, 9(18.75%) samples were staying at home with parents and 5(10.42%) were residing at outside the campus/ PG.

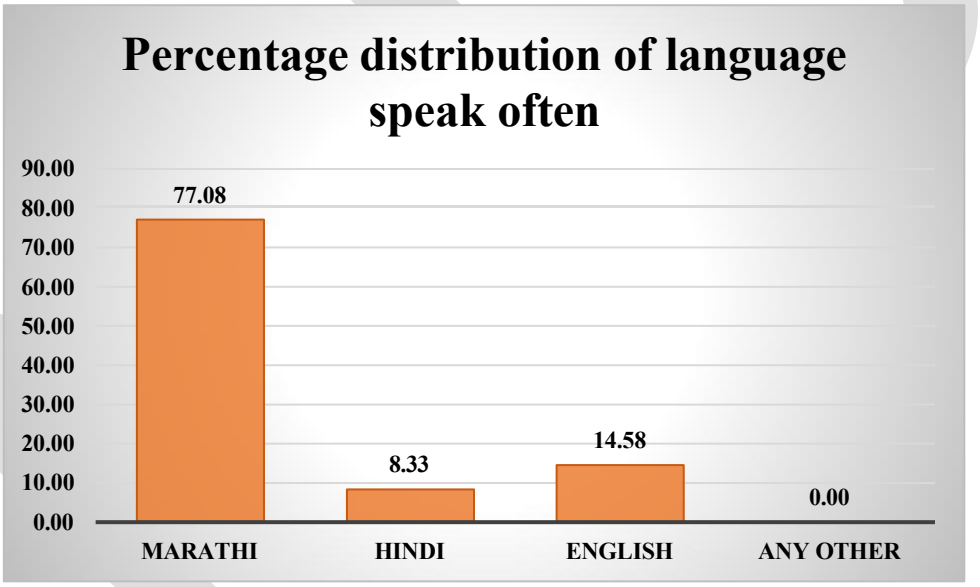

Fig. no 4 showing distribution of language speak often.

Fig. no 4 shows regarding language speak often, majority of the sample 37(77.08%) were speak Marathi, 7(14.58%) speak English, 4(8.33%) speak Hindi language very often.

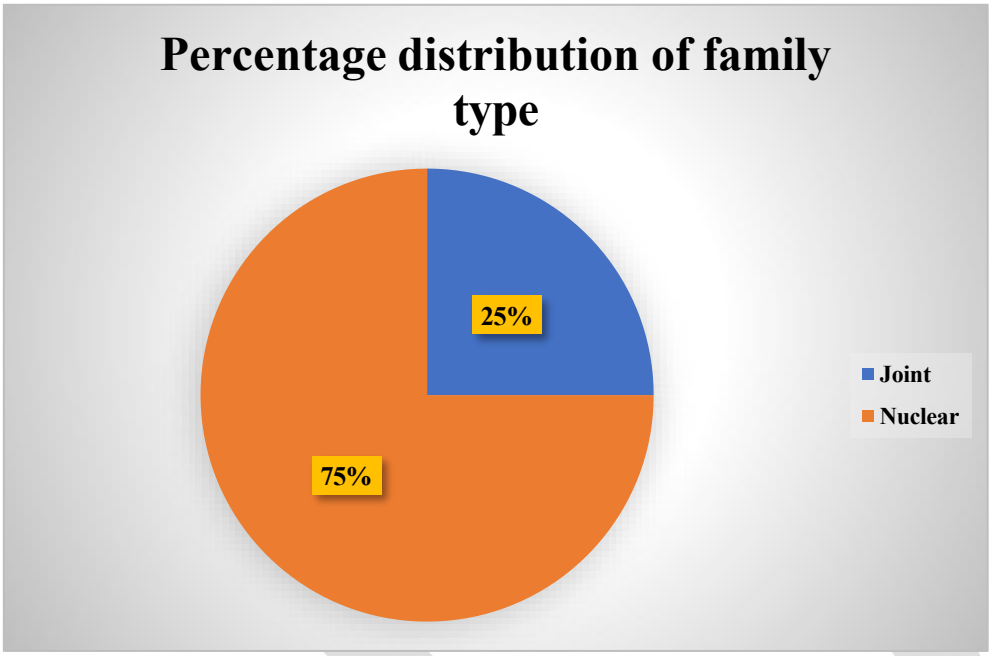

Fig. no 5 showing distribution of number of types of family.

Fig. no 5 shows regarding type of family, 36(75%) sample nuclear family type and 12(25%) joint family.

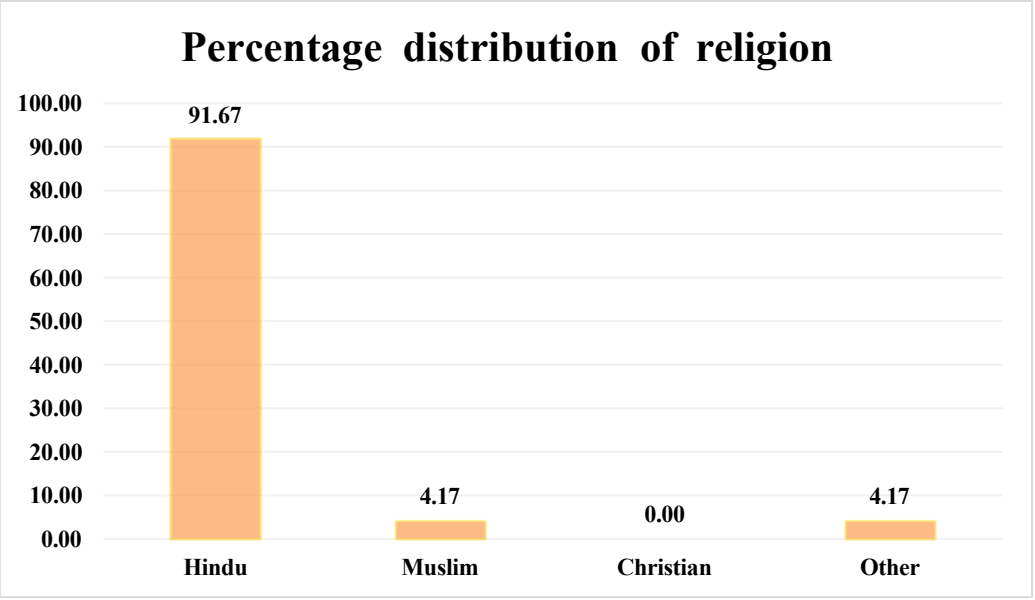

Fig. no 6 showing distribution of religion.

Fig. no 6 shows regarding religion of the sample, majority of the sample 44(91.67%) were Hindu, 2(4.17%) each in Muslim & Other religion.

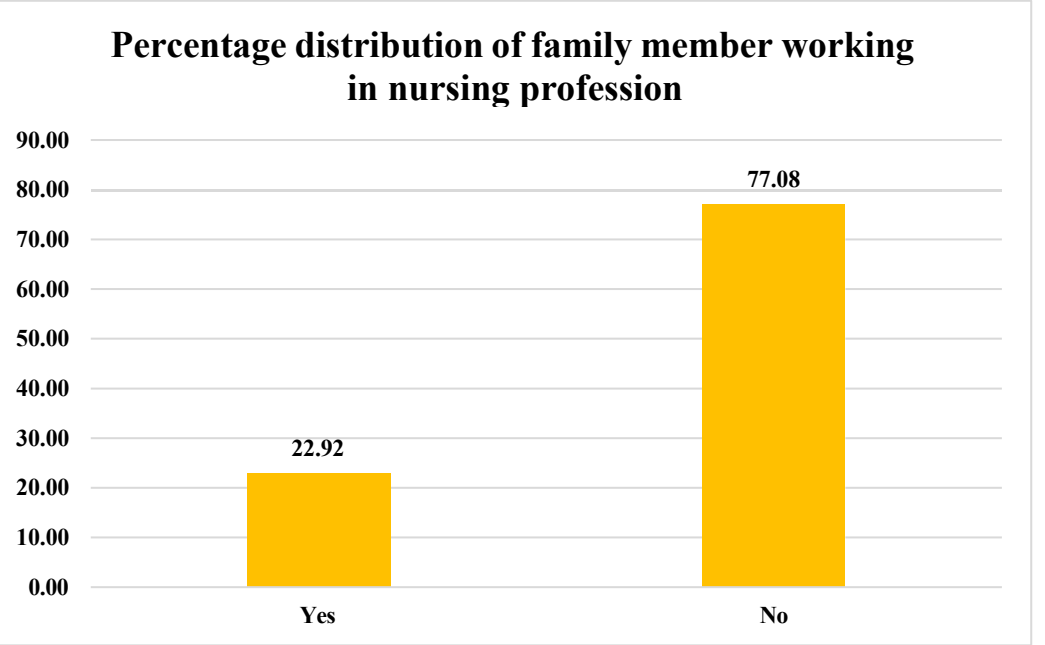

Fig. no 7 showing distribution of family member working in nursing profession.

Fig. no 7 shows regarding family members working in Nursing profession, 37(77.08%) did not had any family members working in nursing profession and 11(22.92%) sample had family members working in nursing profession.

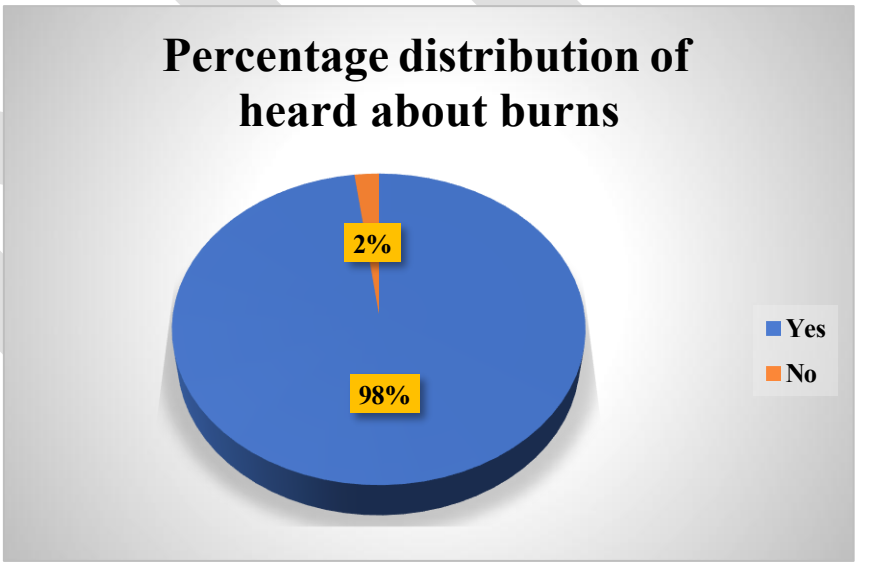

Fig. no 8 showing distribution of heard about burns.

Fig. no 8 shows regarding majority of the sample 47(97.92%) had heard about it and 1(2.08%) did not heard about it.

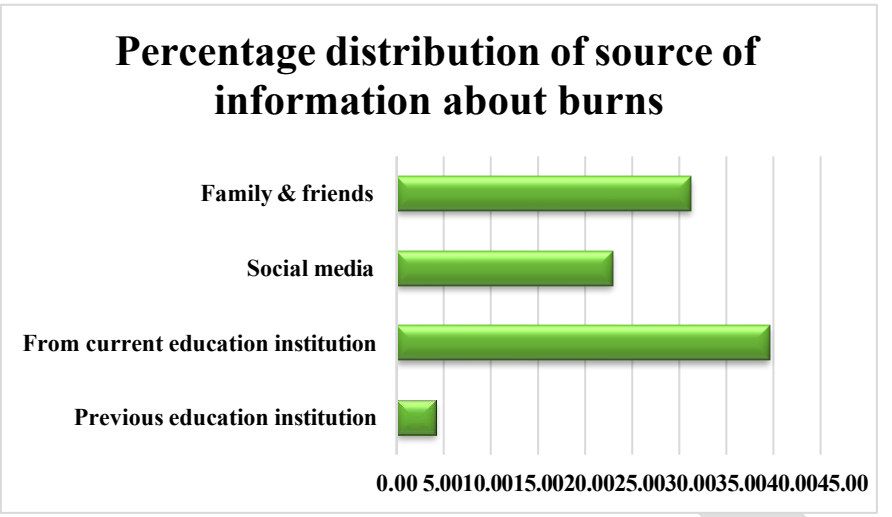

Fig. no 9 showing distribution of source of information.

Fig. no 9 shows regarding source of information about burns, 19(39.58%) head from current education/ institution, 15(31.25%) head from family and friends, 11(22.92%) from social media and 2(4.17%) from previous education institution.

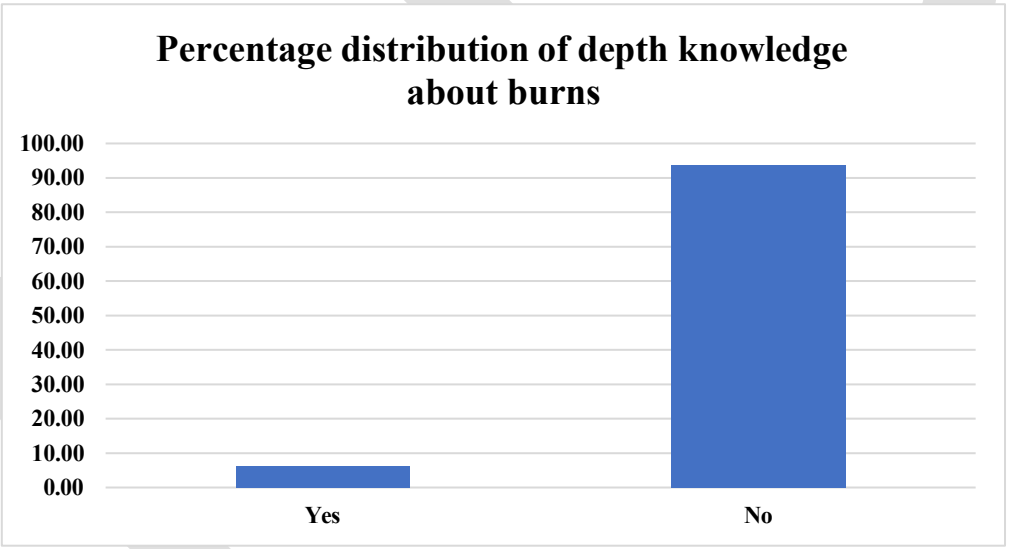

Fig. no 10 showing distribution of depth knowledge about burns.

Fig. no 10 shows regarding depth knowledge about burns, 45(93.75%) did not had depth knowledge on burns and 3(6.25%) had depth knowledge about burns.

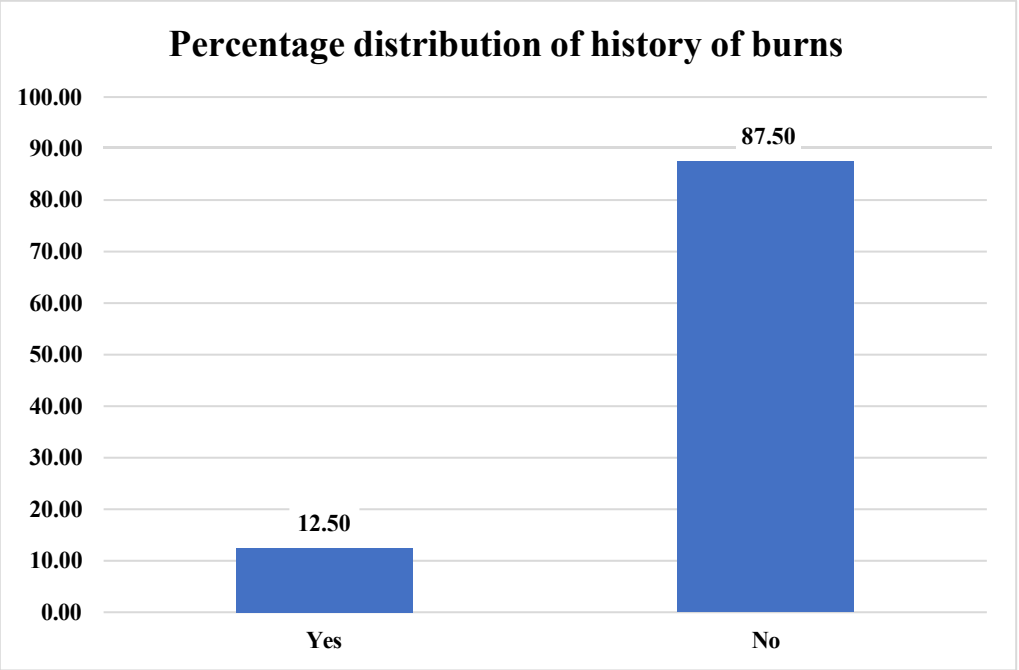

Fig. no 11 showing distribution of history of burns.

Fig. no 11 shows regarding history of burns injury, majority of the sample 42(87.50%) did not had any history of burns and 6(12.50%) had a history of burns.

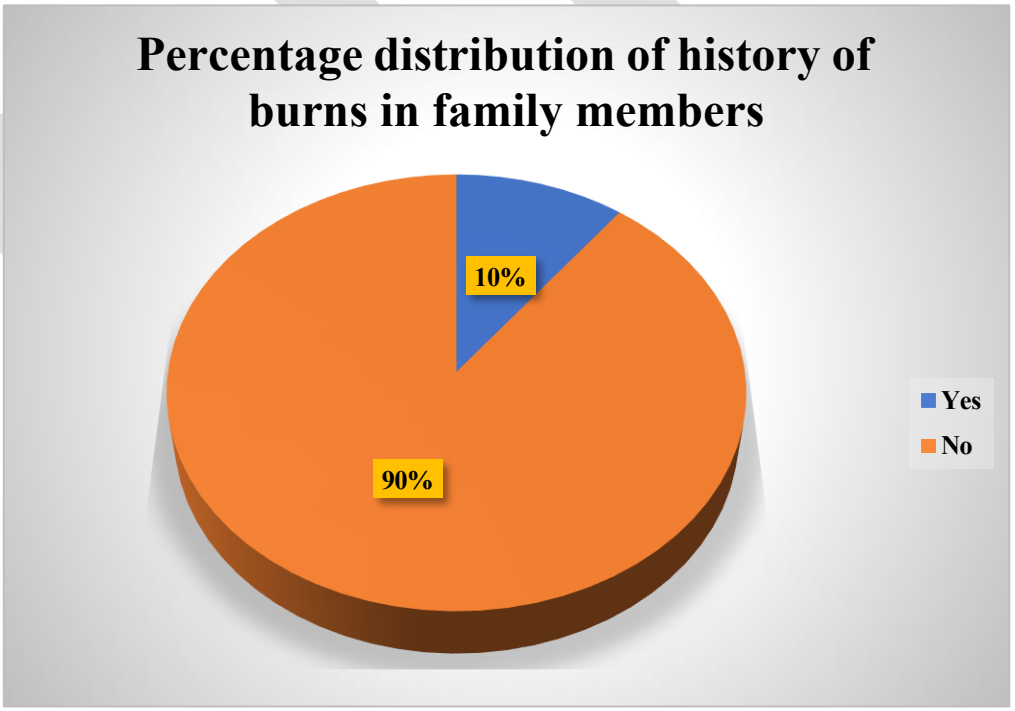

Fig. no 12 showing distribution of history of burns.

Fig. no 12 shows regarding family member had any history of burns, 43(89.58%) did not had any family history of burns and 5(10.42%) had a family history of burns.

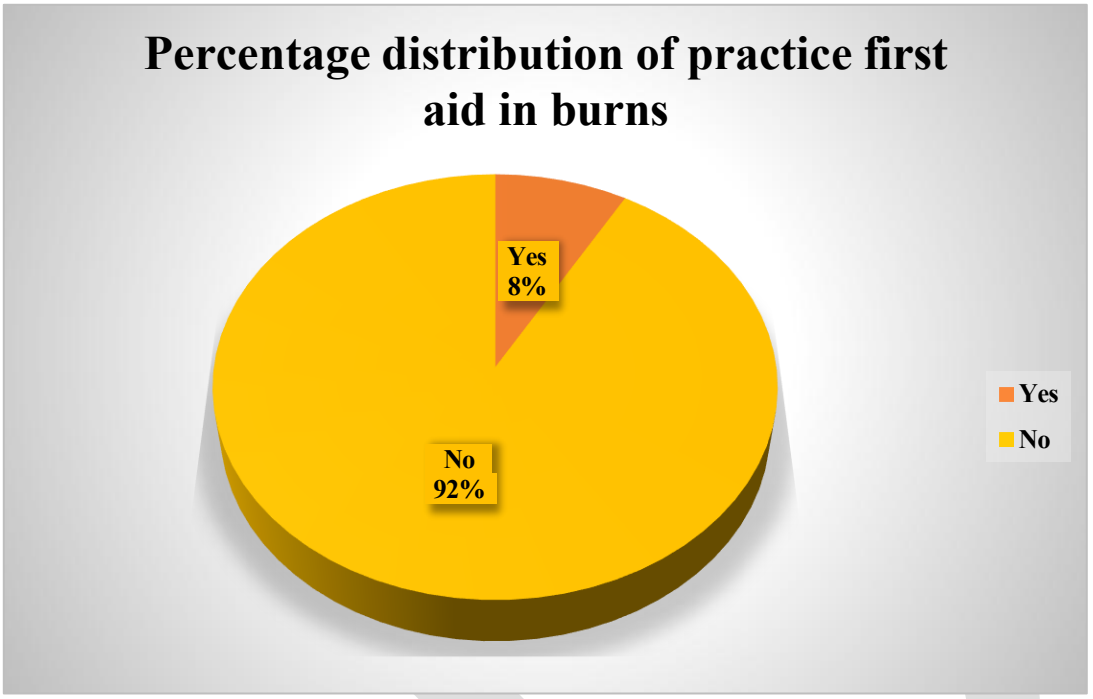

Fig. no. 13 showing distribution of practice of first aid in burns management.

Fig. no 13 shows regarding practice any time first aid medical management for burns, 44(91.67%) did not practices first aid management of burns and 4(8.33%) practice first aid for burns.

V. Discussion

The present study demonstrated that a Planned Teaching Programme is highly effective in improving knowledge regarding burns and their management among nursing students. Prior to the intervention, students had limited understanding of emergency burn care, first aid, and fluid management. Post-test findings showed a marked improvement in knowledge, highlighting the effectiveness of structured teaching.

These results are consistent with findings reported by Priya and Lakshmi (2021), Verma (2021), and Ahmed et al. (2020),[1,5,6] all of whom observed significant improvements in knowledge following educational interventions. The use of structured content, visual aids, and interactive discussion may have contributed to better comprehension and retention of information.

VI. Delimitation

- The study was limited to a small sample size.
- Purposive sampling limits generalization of findings.
- Long-term retention of knowledge was not assessed.

VII. Conclusion

The study concluded that the Planned Teaching Programme significantly improved knowledge regarding burns and their management among nursing students. Incorporating structured teaching, simulation-based learning, and periodic reinforcement into nursing curricula can enhance preparedness for burn care and improve patient outcomes.

VIII. Recommendations: The following recommendation were given: Conduct similar studies with larger samples across multiple institutions. Integrate virtual simulation and skill-based training modules. Provide regular clinical exposure in burn units. Conduct follow-up studies to assess knowledge retention. Implement periodic refresher teaching programme.

Ethical Considerations: Permission was obtained from the ethical committee and conducted with consent from participants.

Funding: Nil

Conflict of Interest: There is no conflict of interest to declare.

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"Care of client with tracheal reconstruction- Tracheoplasty: A case study"

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Abstract: *Tracheal stenosis is a rare but potentially life-threatening airway disorder resulting from congenital abnormalities or acquired causes such as prolonged intubation, tracheostomy, trauma, or inflammatory conditions. This case study presents the clinical management of a 27-year-old male who developed subglottic stenosis following a road traffic accident, prolonged intubation, tracheotomy, and subsequent failed attempts at decannulation. On admission, a comprehensive airway evaluation, including flexible laryngoscopy, confirmed high-grade subglottic stenosis. The client underwent tracheoplasty with resection of the 2nd to 5th tracheal rings and end-to-end anastomosis using interrupted Vicryl sutures. Intraoperative airway patency was verified with the Valsalva manoeuvre, and the postoperative course was stable with no evidence of bleeding, airway compromise, or subcutaneous emphysema. Postoperative bronchoscopy confirmed an intact anastomosis and mobile vocal cords. Nursing management focused on airway clearance, infection prevention, communication support, pain management, and careful positioning with neck flexion. Close monitoring for respiratory distress, secretion pattern, wound integrity, and overall hemodynamic stability was maintained. The client demonstrated progressive improvement and readiness for further rehabilitation. This case highlights that timely diagnosis, multidisciplinary perioperative care, and meticulous surgical technique allow successful tracheal reconstruction and restoration of normal airway function.*

Key words: *Tracheal stenosis, Subglottic stenosis, Tracheoplasty, Airway reconstruction, Prolonged intubation, Perioperative nursing care.*

I. Introduction:

Tracheal stenosis is a pathological narrowing of the tracheal lumen (airway) that impairs normal airflow and can lead to dyspnea, stridor, recurrent respiratory infections, and even respiratory failure in severe cases. It is observed across age groups but manifests differently depending on its origin. Classification based on etiology divides tracheal stenosis into congenital and acquired forms, each with distinct causes, presentations, and implications for management.[1]

Congenital tracheal stenosis is present from birth and results from embryological anomalies in tracheal development. In many cases, this is due to abnormal cartilage formation, such as complete tracheal rings, where the normal C-shaped cartilaginous rings are replaced by O-shaped rings that produce a fixed and uniform narrowing of the airway. In contrast, acquired tracheal stenosis develops after birth because of injury, inflammation, or prolonged mechanical insult to the trachea. The most common cause is iatrogenic injury from prolonged endotracheal intubation or tracheostomy, which induces pressure necrosis, mucosal injury, and subsequent fibrosis leading to luminal narrowing. Other less frequent causes include external trauma, infection, autoimmune conditions, and neoplasms. Acquired stenosis may present later in childhood or adulthood with progressive symptoms such as exertional dyspnoea, wheezing, or recurrent airway compromise, and the approach to management depends on the severity, length, and location of the stenotic segment.[2]

II. Etiology

In 1969, it was first discovered that, because of intubation or tracheostomy, tissue ischemia occurs due to ETT cuff pressure. It compromises mucosal blood flow, leading to subglottic scarring and Fibrosis.[3]

Scar Formation for the tip of the breathing tube leads to Wegener's granulomatosis (A condition of blood vessel inflammation), inflammatory diseases, trauma, and burn injuries.[4]

III. Types: Acquired and congenital tracheal stenosis.

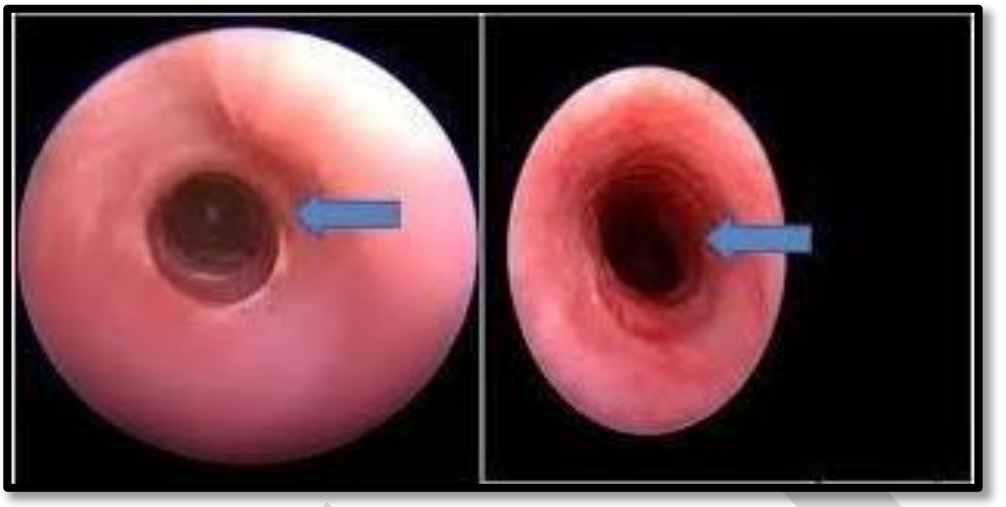

Fig no.1- Congenital tracheal stenosis. Source: Google image

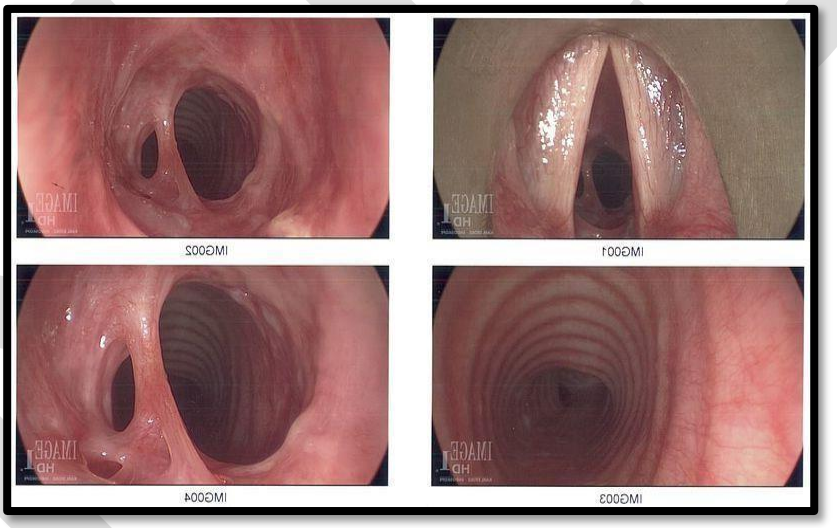

Fig no.2- Post intubation acquired tracheal stenosis. Source: Google image

IV. Signs & symptoms:

Most of the symptoms in adults and children are the same:

- Difficulty in breathing after vigorous activities.
- Wheezing
- Frequent cough
- Persistent cold
- Pneumonia or other viral or bacterial infection
- Persistent asthma that could not be better after treatment
- Apnea
- Shortness of breath

- Chest congestion
- Feeling of phlegm stuck within the airway. [5-6]

Specific to infants and children, signs, and symptoms:

- Infants feel difficulty during breastfeeding and after feeding and fatigue.
- While eating, some children may feel choking, difficulty in breathing.
- Infants and children may experience noisy breathing, cyanosis in the mouth or nose.

V. Diagnostic test: Following are diagnostic test for assessment.

- Tracheo-bronchoscopy
- Laryngoscopy - Trans nasal flexible laryngoscope
- Computed tomography
- MRI- Magnetic Resonance Imaging
- PET - Positron Emission Tomography
- Pulmonary function test
- X-ray of chest and windpipe
- Voice evaluation test

VI. Surgical Treatment:

Surgical management is indicated in clients with moderate to severe tracheal stenosis who are symptomatic or in whom conservative and endoscopic interventions have failed. The primary objective of surgical treatment is to restore and maintain an adequate airway lumen while preserving normal tracheal function. The choice of surgical technique depends on the etiology, length, location, and severity of the stenosis, as well as client-specific factors such as age and comorbidities.

Tracheal resection with primary end-to-end anastomosis is considered the gold standard for short-segment acquired tracheal stenosis, particularly when the diseased segment is well defined and limited in length. In this procedure, the stenotic segment is excised, and the healthy ends of the trachea are re-approximated. Careful attention is given to tension-free anastomosis to prevent postoperative complications such as restenosis or anastomotic dehiscence.

For long-segment tracheal stenosis, especially in congenital cases, slide tracheoplasty is the preferred surgical technique. This method involves longitudinal division of the trachea followed by sliding and reconstruction to widen the airway lumen. Slide tracheoplasty offers the advantages of preserving native tracheal tissue, reducing anastomotic tension, and providing a stable, growth-compatible airway, particularly in pediatric clients.

In selected cases where reconstruction is complex or when clients are poor candidates for definitive surgery, tracheal stenting may be used as a temporary or palliative measure. However, stenting is associated with complications such as granulation tissue formation, migration, and infection, and therefore is not considered a definitive solution.

Postoperative care is critical to surgical success and includes airway monitoring, prevention of infection, management of secretions, and avoidance of excessive neck extension or flexion to protect the anastomosis. Long-term follow-up is essential to assess airway patency and detect complications such as restenosis at an early stage.[7]

VII. COMPLICATIONS:

- Chest infection
- Bleeding
- Granulation tissue formation
- Restenosis of the trachea
- Damage to the major organ while using the bypass machine
- ECMO may be needed to secure heart and lung function after the procedure.
- Wound infection
- Anastomotic separation
- Laryngeal edema
- Glottic dysfunction
- Scar is markedly seen on chest.

VIII. Case report:

A 27-year-old male client presented to the Emergency Department on 23 December 2022 with a history of road traffic accident on 30 June 2022. Following the accident, he sustained a severe head injury and required endotracheal intubation for seven days. Neuroimaging revealed an epidural hematoma with cerebral contusions. In addition, the client suffered multiple facial bone fractures, chest trauma, and bilateral alveolar injury.

Subsequently, the client underwent a tracheotomy. Post-tracheotomy, he was able to maintain adequate oxygen saturation on room air. However, he later developed episodes of respiratory distress, necessitating ventilatory support, and multiple attempts at decannulation were unsuccessful.

For further evaluation and definitive management, the client was referred to a hospital. On examination, video laryngoscopy was performed, which revealed subglottic stenosis. In view of the diagnosis and persistent airway compromise, a surgical tracheoplasty was planned.

All necessary hematological and biochemical investigations were completed. A tracheotomy site swab was sent for microbiological culture and sensitivity, and neurological fitness for surgery was obtained.

Operation notes:

The client was positioned supine. Superior and inferior subplatysmal flaps were elevated up to the hyoid bone and sternal notch, respectively, followed by a midline cervical dissection. The thyroid gland was identified, and the isthmus was divided and retracted laterally to expose the trachea.

The trachea was dissected free from surrounding tissues up to the stenotic segment, which extended from the first to the fifth tracheal rings. Partial division of the thyrohyoid membrane facilitated exposure. The trachea was opened in the midline, and the extent of stenosis was assessed. The second to fifth tracheal rings were resected.

A primary end-to-end tracheal anastomosis was performed using interrupted 4-0 Vicryl sutures for the posterior membranous wall (intraluminal) and interrupted 3-0 Vicryl sutures for the lateral and anterior walls (extraluminal). The superior cornua of the thyroid cartilage were divided to reduce anastomotic tension. The neck was flexed, sutures secured, and tissue adhesive applied over the anastomosis. Anastomotic integrity was confirmed with a Valsalva maneuver at 25 mmHg, with no air leak.

The thyroid isthmus was sutured over the anastomosis, the strap muscles were re-approximated, and a corrugated rubber drain was placed. The wound was closed in two layers with 3-0 Vicryl and skin staples, followed by a sterile dressing.

Postoperatively, the patient was nursed with the neck flexed and extubated once fully awake in a head-elevated position. No postoperative complications such as bleeding, swelling, respiratory distress, or subcutaneous emphysema were noted.

Nursing diagnosis:

1. Ineffective Airway Clearance related to accumulation of thick tracheobronchial secretions as evidenced by abnormal breath sounds, dyspnea, persistent cough, and shortness of breath.

Nursing Intervention

- ✓ Maintain semi fowlers position.
- ✓ Gentle suctioning as per secretion frequency.
- ✓ Nebulize the client as per the physician's order to eliminate secretion.
- ✓ Assess vitals and auscultate breath sounds.
- ✓ Document respiratory secretion, amount, and characteristics of sputum.
- ✓ Check client's SPO_2 level and administer O_2 if required.
- ✓ Perform ABG to monitor client oxygen levels in the blood.
- ✓ Involve a respiratory therapist to perform gentle chest physiotherapy to loosen the secretion.
- ✓ Encourage Fluid intake.

2. Impaired Verbal Communication related to the presence of an artificial airway as evidenced by inability to speak clearly and difficulty in verbal expression.

Nursing intervention

- ✓ Assess the client's communication ability.
- ✓ Assess the effectiveness of nonverbal communication and perform positive gestures to communicate with the client.
- ✓ Display the communication board in front of the client.
- ✓ Provide emotional support to the client.
- ✓ Give the call bell to the client.
- ✓ Use of a paper pen to convey a message.
- ✓ Collaborate with the speech therapist and physician.

3. Risk for Infection related to surgical incision and increased airway secretions secondary to impaired swallowing.

Nursing intervention

- ✓ Monitor client temperature.
- ✓ Assess skin integrity in each shift, assess the Braden scale.
- ✓ Observe operating site for erythema, color, exudates, redness, oozing.
- ✓ Monitor WBC as per physician's order.
- ✓ Follow SOP (standard of precaution) in the unit while giving care in the unit.
- ✓ prophylactic antibiotic as per physician order

4. **Other Nursing intervention:**

- Not to turn client 48 hrs. To 72 hrs. as per physician order.
- To keep neck flexed.
- Keep bronchoscope standby near client bed.
- Check for neck dressing for any oozing.
- Watch for subcutaneous emphysema.
- Watch for distress.
- Maintain strict input output charting.
- Start RT feeding as per the physician's order.
- Do not strain while defecating, use of laxatives as per the physician's order.
- Perform basic care.
- Administer medication as per the physician's order. Majorly avoid analgesic tramadol and steroids.

IX. Conclusion:

The treatment of tracheal stenosis, tracheoplasty, is a decisive and successful surgical procedure, especially in patients with severe airway impairment for whom conservative therapies are insufficient. Surgical method advancements, particularly tension-free anastomosis and sliding tracheoplasty, have significantly increased overall survival, functional results, and postoperative airway patency. To reduce problems, including restenosis, anastomotic failure, and infection, careful preoperative evaluation, careful intraoperative technique, and attentive postoperative care are crucial. To ensure the best possible recovery and long-term airway function, interdisciplinary coordination between surgeons, anaesthesiologists, nurses, and rehabilitation teams is equally crucial. For patients with both congenital and acquired tracheal stenosis, tracheoplasty provides long-lasting symptom relief, enhanced quality of life, and positive long-term outcomes when properly recommended and skilfully executed.

Funding: Nil

Conflict of Interest: There is no conflict of interest to declare.

Acknowledgement: The author would like to thank the client for giving consent and sharing valuable information related to the case study.

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"Comparison of Jigsaw Versus Lecture Methods as Teaching Strategy on Nursing Students' Knowledge of Ulcerative Colitis."

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Abstract: *Nursing education is aimed at preparing nursing students as future professionals to meet the demands of a rapidly evolving health landscape. To match the changes, nursing educators should be able to adopt innovative teaching strategies to equip nursing students with improved knowledge. This study aimed to compare an innovative teaching strategy with the conventional lecture method to determine which strategy is more effective in improving student knowledge attainment on a disease condition.* ***Objective:*** *Compare the effect of Jigsaw versus the lecture method as a teaching strategy on knowledge of ulcerative colitis among nursing students.* ***Method and Materials:*** *The research adopted a quantitative approach & experimental pre-test post-test group design, using non-probability convenient sampling. Nursing students were randomly assigned to two groups. Group A received the innovative Jigsaw teaching strategy, and Group B received the traditional lecture method. In Jigsaw, the students were further divided into six subgroups and were allotted subtopics. Group B was taught the conventional lecture method by using a PowerPoint presentation complemented with audiovisual aids. Before teaching the topic on ulcerative colitis, both groups were given a pretest with a 44-item multiple-choice questionnaire on this condition.* ***Results:*** *All participants were girls, and the majority of 86% were between 20 and 21 years. The pre-test scores of both groups were not statistically significant by using an independent t-test. The paired t-test between the same groups' pre- and post-scores showed a highly significant p-value ($p = 0.01$) for the Jigsaw method, whereas it was not significant for the lecture method ($p = 0.09$). The post-test scores of both groups were analysed through an independent t-test ($p = 0.04$) showed positive significance with the Jigsaw method.* ***Conclusion:*** *The study found that the Jigsaw teaching method was more effective as compared to the traditional Lecture method. In response to the open-ended question regarding their satisfaction with the teaching methods, participants expressed that the jigsaw innovative strategy was more engaging, interactive, and enjoyable. The Jigsaw method is recommended as a more effective alternative to lectures for educating nursing students on disease conditions.*

Keywords: *Jigsaw strategy, Lecture strategy, knowledge, nursing students, ulcerative colitis*

I. Introduction:

Effective teaching strategies are essential for fostering student engagement, understanding, and academic achievement. Among the wide array of instructional methods, the Lecture and Jigsaw approaches stand out for their contrasting yet complementary strengths in the learning environment. The Lecture method is one of the oldest and most traditional forms of instruction. It involves a teacher-centred approach where the instructor delivers content directly to students, typically in a structured and time-efficient manner. This method is widely used in higher education and large classroom settings for its ability to cover substantial content within a limited timeframe. In contrast, the Jigsaw method is a cooperative learning strategy that emphasizes student collaboration, responsibility, and active participation, promoting both individual accountability and collective learning. The method encourages deeper understanding, critical thinking, and social skills by transforming students into active contributors to the learning process. This study gives a comparative exploration of these two distinct yet valuable teaching methods, highlighting how each can be effectively used depending on educational goals and classroom dynamics.[1]

Darabi F, Karimian Z, Rohban A. (2025) A quasi-experimental study was undertaken to evaluate the comparative impact of traditional lecture-based teaching and Jigsaw Cooperative Learning (JCL) on student knowledge, performance, and satisfaction. The study involved 50 undergraduate public health students selected through convenience sampling. Following the instructional intervention, students' performance and satisfaction were assessed using two researcher-developed questionnaires consisting of 80 and 18 items, respectively. Pre-test scores for knowledge were relatively similar across both groups; however, post-test results revealed a significant improvement in the JCL group (mean score: 16.68) compared to the lecture group (mean score: 10.76) ($p < 0.001$). Furthermore, the JCL group outperformed the lecture group in various

performance indicators such as poster and pamphlet preparation, role-playing, and slide creation, all showing statistically significant differences ($p < 0.001$). In terms of satisfaction, students taught through the JCL method reported higher scores across most subscales, except for motivation ($p= 0.17$) and problem-solving ($p = 0.43$), where no significant difference was found. These findings suggest that JCL enhances student learning, leading to better academic outcomes and a more satisfying learning experience, supporting its integration into contemporary teaching practices.[1]

Sanaie N, Vasli P, Sedighi L, Sadeghi B. (2019) conducted a quasi-experimental study between January and November 2018 to compare the effects of lecture-based and Jigsaw teaching methods on self-regulated learning and academic motivation among nursing students. The study included 94 students in their fourth semester, divided into two classrooms, with one group randomly assigned to receive lecture-based instruction and the other to participate in Jigsaw learning sessions. Both groups underwent seven instructional sessions, each lasting two hours. Data were collected using a demographic questionnaire, a self-regulated learning inventory, and an academic motivation scale, administered before and after the intervention. Statistical analysis using the Kolmogorov-Smirnov test, paired t-test, and independent t-test revealed no significant difference in pre-intervention scores between the two groups ($p = 0.59$ for self-regulated learning; $p = 0.38$ for academic motivation). However, post-intervention results indicated a statistically significant improvement in both self-regulated learning and academic motivation scores in the Jigsaw group compared to the lecture group ($p = 0.000$). These findings highlight the potential of the Jigsaw teaching strategy as an effective approach to enhance theoretical learning outcomes, particularly in promoting autonomy and motivation among nursing students.[2]

Costouros T. (2019) examined the comparative effectiveness of jigsaw cooperative learning (JCL) and traditional lecture methods in improving student academic performance and learning experiences. The study was conducted in an introductory course on insurance and risk management at a business school, aiming to evaluate how different pedagogical strategies impact student outcomes. The course was divided into eight modules, with half taught through conventional lectures and the other half using the JCL method. Student performance was assessed through quizzes administered after each module, while their perceptions of the learning experience were measured using a validated 15-item questionnaire rated on a five-point Likert scale. Two distinct student groups were studied: a diverse cohort from a traditional university setting and a group of international students from India. The comparative analysis of these groups revealed insights into the differential effectiveness of JCL across diverse learner populations. This study adds to the growing body of literature on active learning techniques in professional education and underscores the potential of JCL as an inclusive and impactful teaching strategy.[3]
A study conducted by **Suvarna P, Shenoy JP, Pallipady A. (2023)** on effectiveness of the jigsaw method as a case-based learning strategy for first-year medical students in applied physiology. The cross-sectional interventional study included 150 first-year medical students who were randomly assigned to four parent groups, each further divided into four subgroups. A designated team leader was appointed in each subgroup to facilitate coordination and time management. Following the intervention, students completed pre- and post-tests across multiple clinical case scenarios. Results showed a statistically significant improvement in post-test scores across all scenarios, with an average knowledge gain of 118% ($p < 0.001$), indicating that the jigsaw approach effectively enhanced conceptual understanding. Furthermore, student feedback strongly supported the method, especially when integrated with traditional teaching. Participants reported that the jigsaw method made learning more engaging, easier to comprehend, and more memorable, thus aiding in better exam preparation. The study concludes that the jigsaw method not only supports active, student-cantered learning but also fosters essential professional skills such as teamwork and communication.[4]

Objectives of the study:

1. To assess the baseline level of understanding of ulcerative colitis among nursing students.
2. To determine the effect of the jigsaw teaching strategy on knowledge of ulcerative colitis among nursing students.
3. To determine the effect of the lecture teaching strategy on knowledge of ulcerative colitis among nursing students.
4. To compare the effect of Jigsaw and lecture teaching strategies on knowledge of ulcerative colitis among nursing students. students selected institute**.**

Research questions:

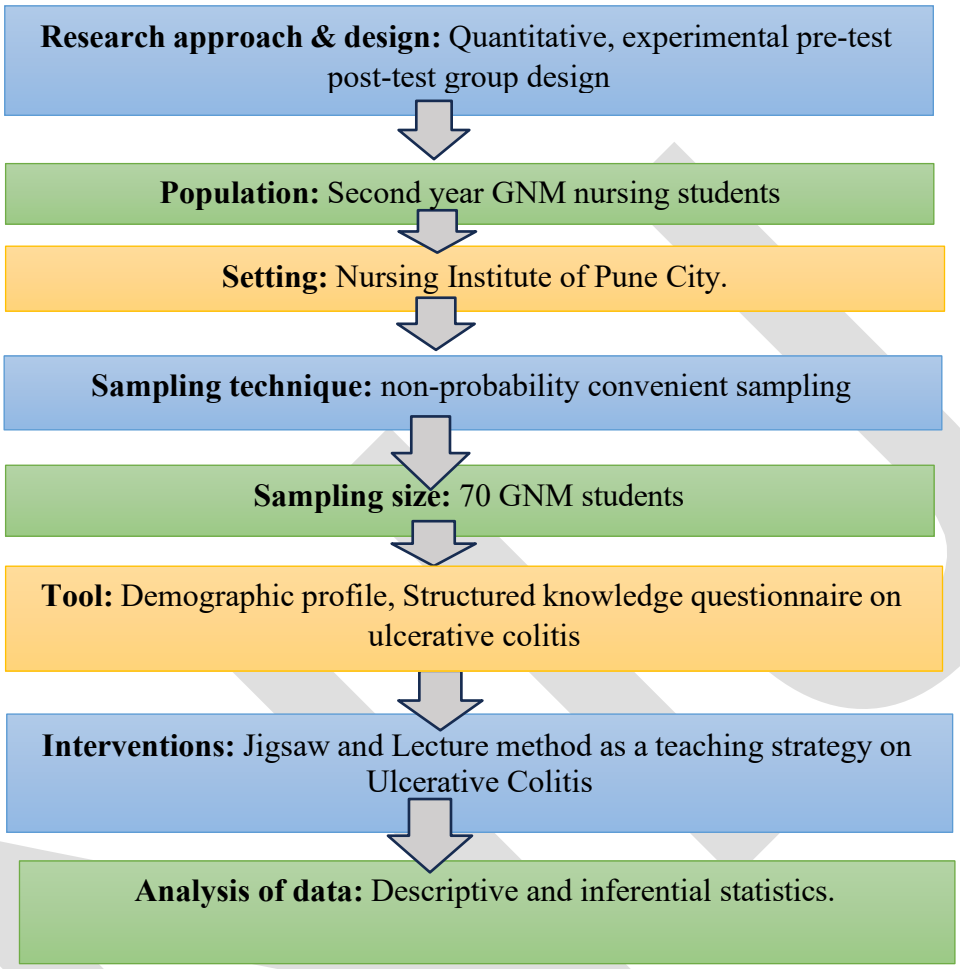
1. Is there an effect of jigsaw teaching strategies on knowledge of ulcerative colitis among nursing students?
2. Is there an effect of lecture teaching strategies on knowledge of ulcerative colitis among nursing students?

Hypotheses:

1. $H0_1$: there is no significant difference between the pre-test and post-test knowledge scores among nursing students using the jigsaw teaching strategy at 0.05 levels of significance.

2. $H0_2$: there is no significant difference between the pre-test and post-test knowledge scores among nursing students using the lecture teaching strategy at 0.05 levels of significance.
3. $H0_3$: there is no significant difference between the jigsaw and lecture teaching strategy among nursing students at 0.05 levels of significance.

II. Methodology: Schematic representation of research-



Data collection commenced on March 10, 2025. Prior to the study, informed consent was obtained from the participants, and necessary approvals were secured from relevant authorities. The participants were then randomly assigned to two experimental groups. The selected topic for the teaching intervention was ulcerative colitis. In the Jigsaw group, students were further divided into six smaller subgroups, and the topic was broken down into six distinct subtopics. Meanwhile, the Lecture group received instruction through a PowerPoint presentation supplemented by audiovisual aids. Participants in both Group A (Jigsaw) and Group B (Lecture) were provided with a digital questionnaire link to complete the pretest assessing their baseline knowledge on ulcerative colitis. After the implementation of the respective teaching methods, post-test data was collected using the same digital questionnaire link to evaluate any changes in knowledge.

III. Result analysis and interpretation of data:

Table No. 1.1: Demographic Variables

N= 70

Sr. No.	Item	Frequency (f)	Percentage (%)
1	**Age in years**		
	20-21	60	86
	22-23	7	10
	24-25	2	3

	26 and above	1	1
2	**Gender**		
	Female	70	100
	Male	0	0
	Others	0	0
3	**Name of the course**		
	2nd yr GNM	70	100

The above table shows the distribution of samples according to age, with 86% of the maximum in the 20-21 years category. All samples were from 100% female students in the second year of the GNM course.

Table 1.2: Pre-and post-knowledge score of the Jigsaw teaching strategy.

$n_1 = 36$

Sr. No.	Knowledge grade	Pretest		Post test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	**Satisfactory**	7	19	2	6
2	**Good**	21	58	24	66
3	**Very Good**	8	22	10	28

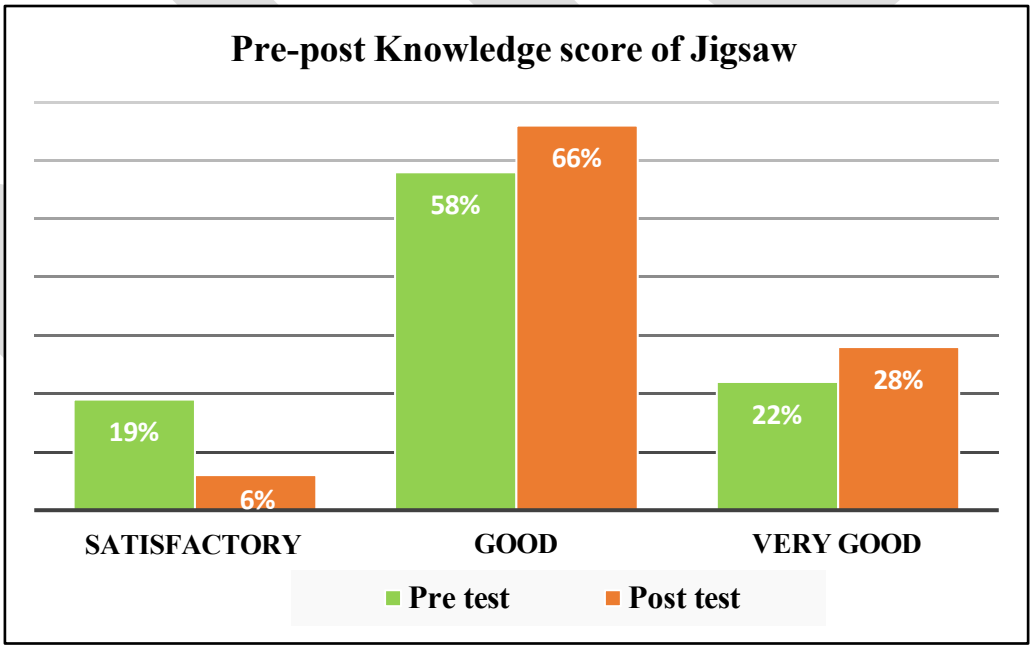


Fig.1 Distribution of knowledge score of Jigsaw method.

The findings presented above illustrate the distribution of knowledge scores before and after the implementation of the Jigsaw teaching method. In the pretest results, 19% of students fell into the satisfactory category, 58% were rated as good, and 22% achieved a very good score. Following the intervention, the post-test scores showed a shift, with 6% categorized as satisfactory, 66% as good, and 28% as very good.

Table 1.3: Pre and Post knowledge score Lecture strategy.

$n_2 = 34$

Sr. No.	*Knowledge* grade	Pretest		Post test	
		Frequency (*f*)	Percentage (%)	Frequency (*f*)	Percentage (%)
1	Satisfactory	7	21	4	12
2	Good	16	47	22	65
3	Very Good	11	32	8	24

The findings mentioned above represent the distribution of knowledge scores obtained in the pretest and post-test assessments using the Lecture teaching strategy. In the pretest, 21% of the participants scored within the satisfactory range, 47% were categorized as having good knowledge, and 32% fell into the very good category. In the post-test results, 12% of the students were in the satisfactory category, 65% achieved scores within the good range, and 24% attained very good scores.

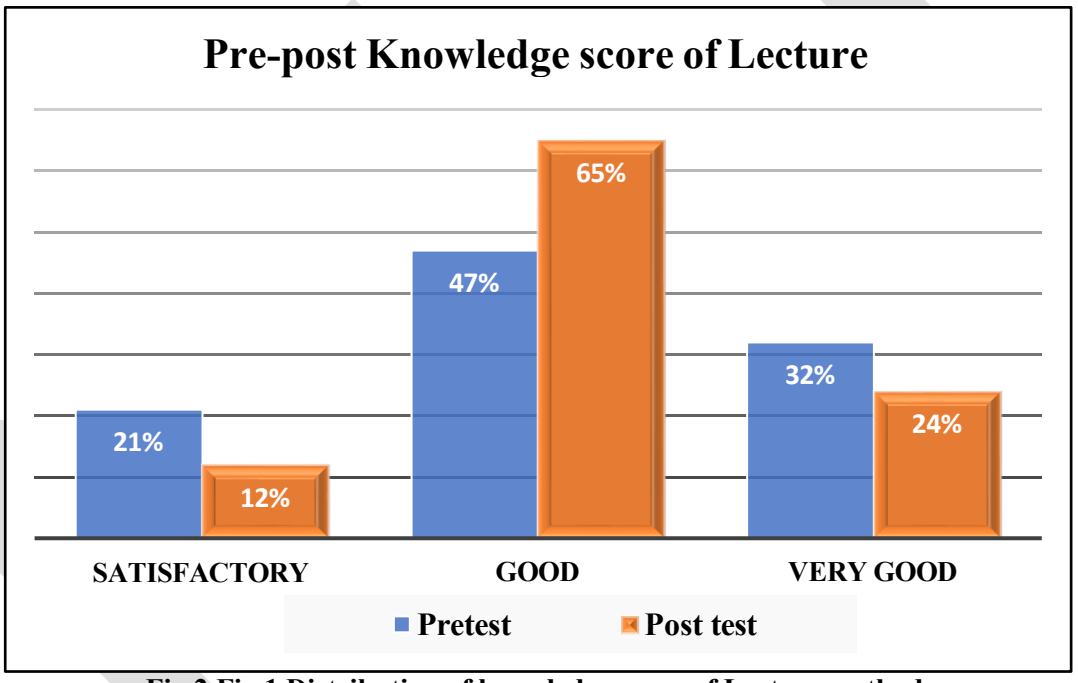


Fig.2 Fig.1 Distribution of knowledge score of Lecture method.

Table 1.4 Paired t test for knowledge score in Jigsaw & lecture strategy.

$n_1 = 36, n_2 = 34$

Group	Jigsaw			Lecture		
	Mean	SD	t' value	Mean	SD	t' value
Pretest	22.1	8.4	0.01	23.8	8.1	0.09
Post test	26.2	6.7		23.6	5.8	

The table above presents the mean, standard deviation (SD), and t-values for both pretest and post-test scores associated with the Jigsaw and Lecture teaching strategies. According to the results of the paired t-test, the Jigsaw group demonstrated

a statistically significant improvement, with a t-value of 0.01 (p = 0.05), indicating a meaningful difference between pre and post-test scores. Therefore, null hypothesis H01 is rejected. In contrast, the Lecture group did not show a significant change, as reflected by a t-value of 0.09 (p = 0.05). These findings suggest that the Jigsaw method effectively enhanced knowledge, whereas the Lecture method did not result in significant knowledge improvement. Consequently, the null hypothesis H01 is accepted.

Table 1.5 Unpaired t-test for comparison of knowledge score on ulcerative colitis in Jigsaw and lecture.

N = 70

Groups	Mean	Mean difference	df	t' value
Jigsaw	26.2	2.7	68	0.04
Lecture	23.5			

The table above presents a comparison between the Jigsaw and Lecture teaching strategies. The mean score for the Jigsaw group was 26.2, while the Lecture group had a mean score of 23.5. The calculated t-value was 0.04, suggesting that the Jigsaw method was more effective than the Lecture method. This result indicates a statistically significant difference between the effectiveness of the Jigsaw and Lecture teaching strategies. Therefore, the null hypothesis H03 is rejected.

IV. Discussion

This research aimed to determine the effect of the Jigsaw and lecture-based methods on knowledge in a nursing institute. The t-test revealed a significant difference between the Jigsaw and lecture teaching strategy and indicates Jigsaw is more effective than the lecture strategy. These results align with previous research by **Sumeet K, Neelam L, Shalini G, Satinder PS. et. all. (2025)** which demonstrated that the jigsaw method led to superior long-term retention compared to traditional lectures. The mixed-effects model revealed individual differences in knowledge retention over time. The decline in retention scores observed in the control group highlights the advantage of active learning over traditional didactic lectures.[5] Similar conclusions were reported by **Darabi F, Karimian Z, Rohban A. (2024)**, who found the JCL method, by engaging students in the teaching-learning process, could cause enhanced knowledge, performance, and satisfaction of the learner, helping them deal with their courses with greater interest.1 **Chauhan A, Mann R, Madaik TS.(2022)** Conducted a study, aimed to determine the effectiveness of the jigsaw method versus traditional lecture methods for the teaching of attitude, communication, and ethics (AETCOM) in Phase I MBBS students and assess the perception of students toward the jigsaw method. The method was a quasi-experimental study that included 104 Phase I MBBS students, who were assigned to the jigsaw group and traditional lecture group. Validated pre-tests, post-tests, and questionnaires were used in the evaluation. Results were on post-test, both groups scored significantly higher than on pre-test, but the scores on pre-test did not differ between them. Post-test scores of the jigsaw group were significantly higher than those of the traditional method group. Jigsaw was rated positively by students for enhancing peer interaction (91%), deeper learning of the subject (90%), and communication skills (89%**).** The study concluded that the jigsaw method is more effective than the traditional teaching method and can be used as a helpful tool for teaching communication skills and teamwork by utilizing cooperative learning strategies.[6]

V. Conclusion

Teaching is an art that involves purposeful activities aimed at bringing about positive changes in learner behaviour. Modified teaching strategies create opportunities for enhanced active learning, knowledge, encouraging student engagement, critical thinking, interest, confidence, and personal development. This study concludes that active learning approaches have a statistically significant impact on student learning compared to traditional methods. The findings highlight that such methods are particularly effective for passive learners, who demonstrated increased participation and improved performance beyond their usual levels.

Ethical Considerations: Ethical committee approval and informed consent were taken before data collection.
Funding: Nil
Conflict of Interest: There is no conflict of interest to declare.

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"Impact of Simulation Scenario on Nursing Students for Future Performance in Clinical Settings."

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Abstract: Background: *Integrating theoretical knowledge with clinical practice is a fundamental component of nursing education. Nurses play a crucial role in the early recognition and management of critical conditions; however, nursing students often have limited exposure to real-life emergencies during their clinical training. Learning in high-risk and unpredictable clinical environments may not be practical for building competence and confidence among students. Simulation scenario–based training provides a safe, realistic, and controlled environment that allows students to practice clinical skills, decision-making, and critical thinking before encountering actual patients. This study aimed to assess the impact of myocardial infarction (MI) management simulation scenarios on learning experience, confidence, and readiness for future clinical performance among nursing students at a selected nursing institute in Pune.* ***Methodology:*** *A descriptive cross-sectional study was conducted in May 2025 among 215 nursing students enrolled in diploma and B.Sc. Nursing programs. Participants were selected using non-probability convenience sampling. Students were divided into 22 groups, each consisting of approximately 10 students, and underwent a 90-minute expert-facilitated simulation scenario on MI management progressing to pulmonary embolism. Data were collected post-intervention using a structured Google Form comprising four sections: demographic data, learning experience, confidence, and readiness for future performance. Each domain included ten items measured on a rating scale. Data were analyzed using descriptive and inferential statistics.* ***Results:*** *Among the participants, 35% were diploma students and 65% were B.Sc. Nursing students, with equal distribution across age groups (18–20 years and above 20 years). Most students reported a positive impact of simulation training, with 94% rating it as an excellent learning method. About 93% felt confident in managing critical situations, and 95% reported readiness for future clinical performance. A significant association was found between familiarity with simulation equipment and confidence levels ($p = 0.039$).* ***Conclusion:*** *Simulation-based training significantly enhanced nursing students' learning experience, confidence, and readiness for clinical practice. Integrating simulation scenarios into nursing curricula is recommended for effective teaching of critical emergency care.*

Keywords: *Impact, Simulation Scenario, Nursing Students, Future Performance, Clinical Settings.*

I. Introduction:

Nursing is an essential profession as it provides holistic care to patients. Nurses should be well-prepared for real clinical settings. New nurses frequently experience "reality shock" and struggle to deliver safe care to their patients when transitioning from academic environments to clinical practice. This includes feelings of anxiety, disorientation, and self-doubt due to the fear of making mistakes. This is because they often lack critical thinking and communication skills.[1-5] This is also because they have learnt nursing skills by shadowing staff nurses and their faculty in clinical areas. In real-world clinical settings, nursing students are usually limited to observing, as these settings are unpredictable, with fluctuating patient needs, emergencies, and high staff workloads. This limits safe opportunities for students to participate actively. Due to concerns about patient safety, liability, and lack of time for supervision, students may only shadow registered nurses rather than practice skills themselves. Students are sometimes shielded by their faculty from intense or emotionally charged situations (e.g., deaths, aggressive patients), which limits exposure to the whole reality of nursing. This volatile environment, while authentic, is not ideal for building student confidence or integrating theory with practice.[6-8]

While linking nursing education to clinical practice settings, simulation-based education offers a powerful solution to many of the challenges student nurses face in real clinical environments, such as volatility, unpredictability, and limited hands-on opportunities. It addresses this gap by replicating clinical scenarios in a safe, controlled environment.[9] Students can practice and refine skills such as medication administration, CPR, wound care, and communication, as repetition builds confidence and enhances mastery of psychomotor skills.[10] Simulation exposes students to low-frequency, high-stakes clinical events they might not encounter in real life but must be prepared for, and fast-paced settings do not always allow time for reflective learning or student decision-making.[11-12] Real-life situations also offer limited opportunities for interaction with interprofessional teams. Simulations built around interprofessional scenarios—where other students act as patients, relatives, or doctors—can improve SBAR communication, assertiveness, and teamwork.[13]

Numerous studies have been conducted on the impact of simulation scenarios on learning care in emergencies. High-fidelity simulation helped nursing students recognize and manage patient deterioration (e.g., respiratory distress, hypotension), thereby improving their clinical judgment and early intervention.[13] A study on simulation to teach basic life support (BLS) found that students who participated in simulation-based BLS training demonstrated significantly better CPR skills, improved retention, and quicker response times compared to those who received lecture-based training.[14] A study on Mass Casualty Incident (MCI) simulation, as reported in Trauma and Mass Casualty Response, found that MCI simulation enhanced students' ability to triage, prioritize care, communicate effectively under stress, and perform rapid assessments in disaster-like conditions.[15] A study on simulation-based anaphylaxis training effectively equipped new nurses to manage anaphylactic shock, boosting their confidence and promoting safe, patient-centred care.[16] High-fidelity medical simulation effectively enhanced students' knowledge and confidence in managing septic shock, proving to be a valuable learning tool for improving resuscitation skills and self-assurance.[17]

According to the Nursing and Midwifery Council (NMC, 2023) "simulation is an educational method which uses a variety of modalities to support students in developing their knowledge, behaviours, and skills, with the opportunity for repetition, feedback, evaluation, and reflection to achieve their programme outcomes and be confirmed as capable of safe and effective practice."[18] Simulation enhances students' learning and management of clinical situations by allowing hands-on decision-making without exposing patients to risk. It fosters critical thinking, skill development, and confidence, while faculty can monitor progress and guide reflective learning toward competence and readiness for real practice.[19] Learners can be encouraged to view the consequences of their actions or inactions from multiple perspectives. Simulation enables deliberate decision-making, leading to varied scenario outcomes—an opportunity not typically available in real clinical settings.[20] Research has demonstrated that simulation increases problem-solving ability, communication competency, cooperation, leadership, critical thinking, and delegation skills.[21-23] A similar finding was observed in a study that examined the impact of repeated multi-patient simulations on the readiness of senior nursing students for practice. In a randomized controlled trial involving 78 students, the intervention group demonstrated significant improvements in self-confidence, knowledge, and professional readiness, indicating that multi-patient simulations effectively enhanced students' preparation for real-world healthcare demands.[24] Simulation-based learning with Standardized Patients enhances self-efficacy, motivation, and clinical skills, making it an effective active learning approach in an academic setting.[25] Simulation experience to reduce anxiety levels among nursing students.[26]

A descriptive quantitative study to examine the perceptions of 76 Saudi novice nursing students regarding satisfaction and self-confidence with High Fidelity Simulation (HFS), using the Student Satisfaction and Self-Confidence in Learning Scale. Their results showed high levels of satisfaction and self-confidence among students. Prelicensure students reported significantly higher satisfaction ($p = 0.03$), and a strong positive correlation was found between satisfaction and self-confidence ($p < 0.0001$). Their study supports HFS as an effective tool in nursing education for enhancing clinical skills, learner engagement, and preparing students for clinical practice.[27]

End-of-life (EOL) care is another challenging area for nursing students, often causing anxiety and feelings of unpreparedness that can impact career satisfaction. Simulation using standardized patients has shown promise in addressing this gap. The study reported that EOL simulations improved students' communication, comfort with sensitive topics, and confidence in hospice care, enhancing readiness for emotionally and ethically complex clinical situations.[28]
Collectively, these studies highlight the growing importance of simulation in preparing nursing students for real-world clinical challenges. Though time-consuming, simulation has the potential to transform nursing education and improve the quality of patient care across various healthcare settings. This study aimed to assess the impact of myocardial infarction (MI) management simulation scenarios on learning experience, confidence, and readiness for future performance in a clinical setting among nursing students at a selected nursing institute in Pune.

Research questions:

1. Does the simulation scenario enhance the learning experience of nursing students?
2. Does the simulation scenario improve the confidence levels of nursing students?
3. Does the simulation scenario enhance the readiness for future performance of nursing students in a clinical setup?
4. Is there an association between selected demographic variables and the learning experience, confidence, and readiness for future performance of nursing students in clinical setups?

Objectives:

1. To assess the impact of the simulation scenario on learning experience among nursing students.
2. To assess the impact of the simulation scenario on the confidence level among nursing students.
3. To assess the impact of the simulation scenario on readiness for future performance of nursing students in a clinical setup.
4. To associate the learning experience, confidence, and readiness for future performance in a clinical setup with their selected demographic variables among nursing students.

II. Research methodology:

A descriptive cross-sectional study was conducted in May 2025 involving 215 nursing students from both diploma and baccalaureate programs. Students were selected through non-probability convenience sampling to evaluate their learning outcomes following a simulation scenario. It focused on the management of myocardial infarction (MI) progressing to pulmonary embolism (PE), a complex and high-risk clinical situation requiring critical thinking and prompt decision-making. Students were recruited from the second and third year GNM and BSc Nursing programs. The study's purpose, procedures, and ethical considerations were clearly explained to all students. Informed consent was obtained through a Google Form.

Eligibility criteria:

Inclusion Criteria

- Students from the Second and Third year GNM and BSc Nursing programs
- Students who were willing to participate and provide informed consent.

Withdrawal Criteria

- Incomplete or duplicate responses.

Scenarios: The 215 nursing students participating in the study were divided into 22 groups, each consisting of approximately 10 participants. Each group of 10 students engaged in a 90-minute simulation session facilitated by experienced faculty. The sessions included a pre-briefing, hands-on simulation with a high-fidelity mannequin, and a structured debriefing to reinforce clinical reasoning.

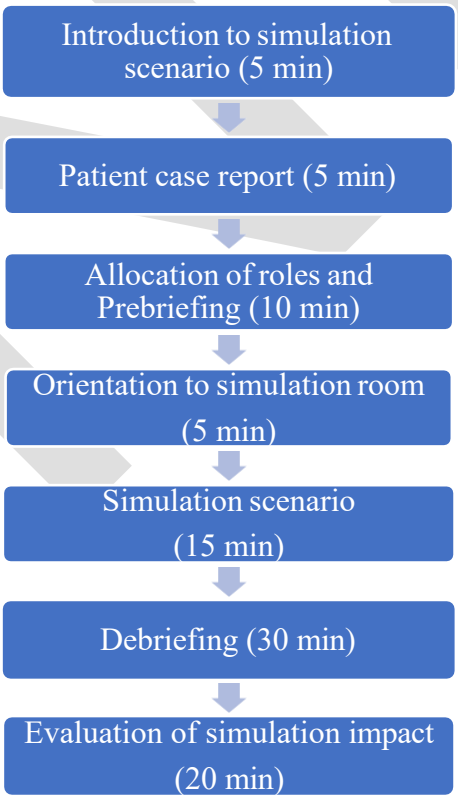


Fig. 1 shows the phases of the simulation scenario.

The scenario session began with an introduction to the learning objectives. Students were then introduced to crisis management, continuous reassessment, situational awareness, use of available resources, and closed-loop communication. These principles were discussed and reinforced throughout the simulation activities.

Each group of nursing students was presented with a simulated MI patient case. They were assigned roles such as primary nurse, physician, patient relative, and student nurse. Through cards, they were asked to select appropriate actions based on the clinical presentation. Subsequently, students were oriented to the simulation room, including the monitoring and care equipment relevant to cardiac care. Simulation scenarios were carried out with each scenario beginning when a designated "primary nurse" entered the room to assess and manage the simulated MI case. Each simulation scenario was followed by a debriefing session led by a faculty. The session included reflective and analytical questions as a group, such as: “How do you feel after the scenario?”, “What happened during the scenario?”, and “What did you learn from managing this MI case?” These discussions allowed students to process the experience, reinforce crisis management principles, and identify areas for improvement. This structured approach aimed to enhance the students’ understanding of acute cardiovascular emergencies, improve confidence in clinical interventions, and foster readiness for real-world clinical practice.

Measurement and scoring:

Data collection took place immediately following the simulation scenario, using a structured Google Form consisting of four sections: (1) demographic information, (2) learning experience, (3) confidence, and (4) readiness for future clinical performance. Each section contained ten items rated on a standardized Likert scale to capture participants’ perceptions and self-assessments across key domains relevant to simulation-based learning. A defined time frame was provided for students to complete the feedback form.

The responses were automatically recorded in Google Sheets and subsequently exported to Microsoft Excel for data cleaning and preparation for analysis. Descriptive statistics, including frequency and percentage, were used to summarize demographic data and response trends. Pearson’s correlation coefficient was used to examine the associations between students’ learning experiences, confidence, and readiness for future performance in clinical practice, with selected demographic variables. These analyses aimed to identify meaningful relationships and differences that could inform future improvements in simulation-based nursing education.

III. Result:

In this study, data from 215 nursing students were analysed descriptively using frequency and percentage. Table 1 describes demographic variables of the students.

Table 1: Frequency distribution of demographic variables.

N = 215

Sr. No.	Demographic variable	Frequency (N = 215)	Percentage (%)
1.	**Age in years:**		
	18-20	108	50.23
	>20	107	49.77
2.	**Course**		
	GNM	76	35.35
	BSc N	139	64.65
3.	**Year of course:**		
	2nd year	120	55.81
	3rd year	95	44.19
4.	**Familiarity with simulation tools:**		
	None	13	6.05
	Basic	88	40.93
	Advanced	114	53.02

The demographic profile indicated that 50% of the students were between 18 and 20 years old, while the remaining 50% were above 20 years old. Sixty-five percent of students were enrolled in the B.Sc. Nursing program where 35% were from the diploma (GNM) program. Fifty-six percent of students were in the 2nd year, while 44% were in the 3rd year of the program. The majority, 53% of students, had an advanced level of familiarity with simulation tools. In comparison, 41% of students had basic knowledge of simulation tools, which reflects a strong representation of students pursuing advanced nursing education.

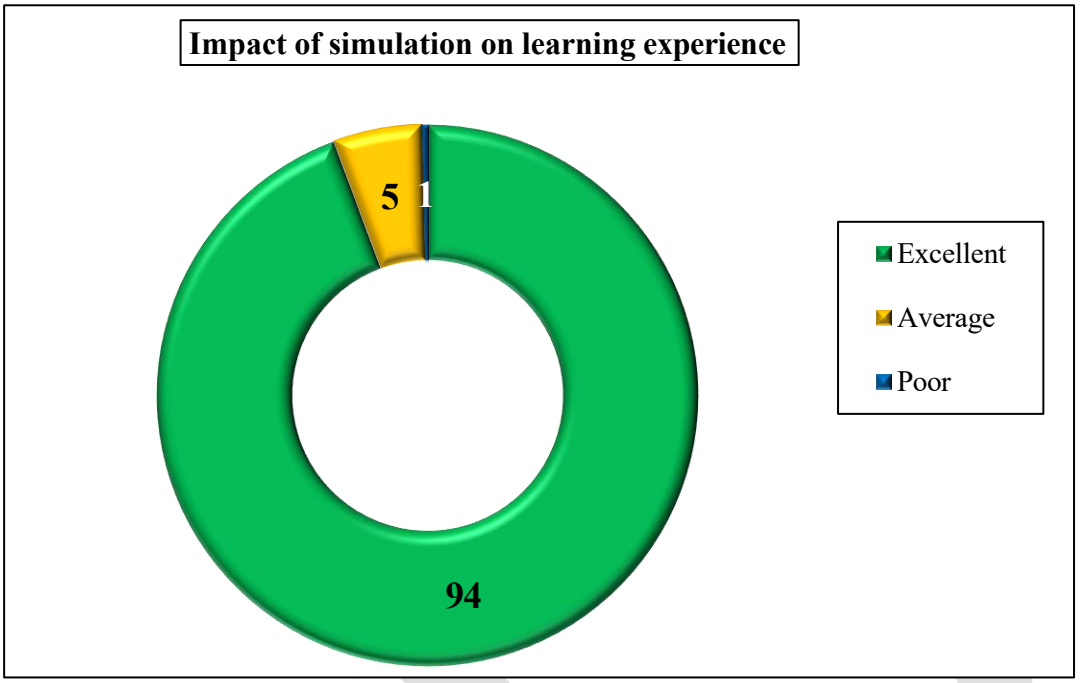
Table 2: Impact of simulation on learning experience

N = 215

Sr. No.	Items	Agree		Neutral		Disagree	
		Freq.	%	Freq.	%	Freq.	%
1.	Clear instructions on the simulation's ground rules were provided at the beginning.	211	98.13	3	1.39	1	0.46
2.	Learning objectives were explained in the beginning.	210	97.67	5	2.32	0	00
3.	Felt the learning environment was safe.	209	97.20	4	1.86	2	0.93
4.	The methods used were supportive and effective.	203	94.41	12	5.58	0	00
5.	Adequate materials were available during the simulation.	182	84.65	29	13.48	4	1.86
6.	The variety of educational materials and activities was promoted in a simulation.	199	92.55	14	6.51	2	0.93
7.	The teaching/ technique used in the simulations helped me to learn the activities very clearly.	204	94.88	11	5.11	0	00
8.	The way simulations worked was appropriate to my learning style.	200	93.02	15	6.97	0	00
9.	The scenarios designed were appropriate to my course of studies.	207	96.27	8	3.72	0	00
10.	The faculty ran the scenario effectively.	202	93.95	12	5.58	1	0.46

Ninety-eight percent of students strongly agreed that clear instructions regarding the simulation ground rules were provided at the beginning, and learning objectives were communicated, as affirmed by 98.67% of students. Ninety-seven percent of students reported feeling that the learning environment was safe, and 94.41% said that the instructional methods employed were both supportive and effective. The availability of adequate materials during the simulation was affirmed by 84.65% of students, while 92.55% of students agreed that a variety of educational materials and activities were incorporated to enhance learning.

The teaching techniques utilized facilitated a clear understanding of the activities for 94.88% of students, and 93.02% of students reported that the simulation modalities were congruent with their learning styles. The relevance of the scenarios to the students' course of study was confirmed by 96.27%, and the faculty's effectiveness in conducting the scenarios was rated positively by 93.95% of students. These findings collectively suggest that the simulation design, content, and facilitation effectively supported the learning needs and preferences of the students, resulting in a high level of satisfaction with the learning experience.



Graph 1: Impact of simulation on learning experience

Graph 1 shows the overall impact of the simulation scenario on the learning experience among nursing students. Ninety-four percent of students rated the simulation experience as an excellent method of learning, reflecting strong satisfaction with this innovative teaching method. These findings suggest that students found the simulation scenario engaging, relevant, and effective in enhancing their understanding of clinical concepts and skills. A smaller portion of the students (5%) rated their learning experience as average. This group may have found some aspects of the simulation less impactful or may have had expectations that were only partially met. Their response still indicates a neutral to moderately positive view of the simulation experience.

Notably, fewer than 1% of students reported a poor learning experience with the simulation, indicating that very few students found this learning method unsatisfactory. This minimal negative feedback further emphasizes the overall acceptance and success of simulation-based learning within this group. Together, these results highlighted the importance of simulation as a preferred instructional strategy in nursing education, which can meet the learning needs of students.

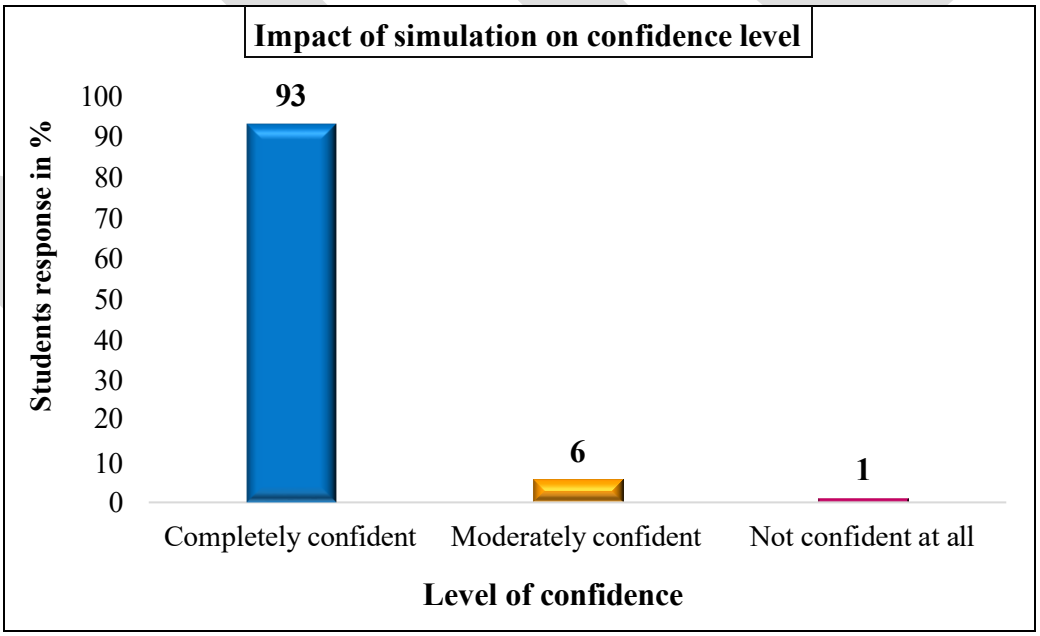
Table 3: Impact of simulation on confidence

N = 215

Sr. No.	Items	Agree		Neutral		Disagree	
		Freq.	%	Freq.	%	Freq.	%
1.	The simulation covered essential content, enabling me to master the subject area in my curriculum.	205	95.34	10	4.65	0	00
2.	I mastered the simulation activity/skill comfortably.	194	90.23	20	9.30	1	0.46
3.	I developed the skill with rationality to perform the activity.	200	93.02	12	5.58	3	1.39
4.	I felt responsible for my learning in the simulation.	205	95.34	7	3.25	3	1.39
5.	I was accountable for the activity assigned to me in the simulation.	204	94.88	10	4.65	1	0.46

6.	I was able to think critically and evaluate my actions in simulations.	199	92.55	14	6.51	2	0.93
7.	I felt more relaxed while learning.	189	87.90	20	9.30	6	2.79
8.	I felt more confident in my competence to handle emergency scenarios.	197	91.62	16	7.44	2	0.93
9.	I was able to identify my strengths and weaknesses in my performance during the simulation.	208	96.74	6	2.79	1	0.46
10.	The feedback was constructive in my learning.	206	95.81	7	3.25	2	0.93

Table 3 above shows the descriptive findings regarding the impact of simulation on confidence. It indicated that the simulation effectively covered essential content necessary for mastery within the students' curriculum, as evidenced by 95.34% agreement. Nighty percent of students reported confidently mastering the simulation activities and skills. Furthermore, 93.02% acknowledged developing skills grounded in rational understanding necessary to perform the activities. High levels of learner responsibility (95.34%) and accountability (94.88%) were also reported by students for their assigned tasks during the simulation. Critical thinking and self-evaluation were agreed for 92.55% of students, promoting reflective practice. Additionally, 87.90% of students felt more relaxed during the learning process. Confidence in managing emergency scenarios increased for 91.62% of students. Notably, 96.74% were able to identify their strengths and weaknesses in performance, supporting targeted improvement. Finally, constructive feedback was perceived as instrumental to learning by 95.81% of students. Collectively, these results demonstrate that the simulation not only enhanced technical competence but also fostered reflective practice, learner autonomy, and confidence in clinical skills.



Graph 2: Impact of simulation on confidence level

Graph 2 shows that the overall impact of the simulation scenario on confidence levels revealed a strong sense of self-assurance among the students. A majority, 93% students, reported feeling fully confident in managing the critical clinical situation presented during the simulation. This high level of confidence suggests that the simulation effectively enhanced their ability to handle complex and high-pressure scenarios. Additionally, 6% of participants identified themselves as moderately confident. Only a small minority, 1%, reported being low confident. This overall distribution indicates that nearly all students feel well-prepared and confident in their clinical abilities following the simulation training. Such

favourable confidence is an encouraging sign of their readiness to perform effectively in real-world clinical settings. It also reflects increased self-efficacy, which is crucial for nursing students as they transition from academic learning to practical application in patient care.

Table 4: Impact of simulation on readiness for future performance in a clinical setup

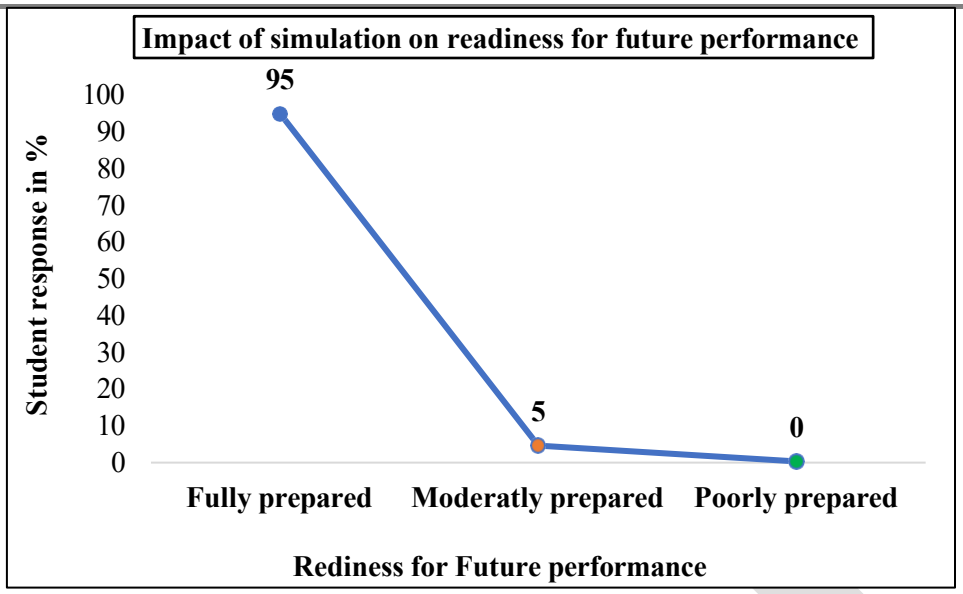
N = 215

Sr. No.	Items	Agree		Neutral		Disagree	
		Freq.	%	Freq.	%	Freq.	%
1.	I can confidently perform this skill in a real scenario.	201	93.48	12	5.58	2	0.93
2.	I can apply my critical thinking to a similar actual situation.	200	93.02	14	6.51	1	0.46
3.	I am confident in my ability to communicate effectively in a real-world setting.	205	95.34	9	4.18	1	0.46
4.	I am emotionally and mentally prepared to handle a similar situation in a real clinical setup.	199	92.55	16	7.44	0	00
5.	I can extend this knowledge and skill to any clinical situation.	210	97.67	4	1.86	1	0.46
6.	I can reason about my decisions and actions in any situation.	201	93.48	13	6.04	1	0.46
7.	I am familiar with the responsibilities of a nurse in any real-life scenario.	211	98.13	4	1.86	0	00
8.	I am confident in my ability to take accountability in real-life situations.	204	94.88	11	5.11	0	00
9.	I am sure of ensuring safety related to actual patient care.	206	95.81	8	3.72	1	0.46
10.	I am confident about being an effective team member in a real situation.	207	96.27	8	3.72	0	00

Table 4 above shows the descriptive findings regarding the impact of simulation on **readiness for future performance** in a clinical setup. Specifically, 93.48% of students felt confident performing the skills in actual scenarios, and 93.02% believed they could apply critical thinking effectively in similar real-life situations. Confidence in effective communication within a clinical environment was affirmed by 95.34% of students. Additionally, 92.55% reported feeling emotionally and mentally prepared to manage comparable clinical situations.

The majority (97.67%) agreed that the knowledge and skills gained could be extended to various clinical contexts. Students also expressed strong confidence in their ability to reason about their decisions and actions (93.48%), understand their nursing responsibilities (98.13%), and uphold accountability in real-world situations (94.88%).

Assurance in ensuring patient safety was reported by 95.81%, while 96.27% felt confident in their capacity to function as effective team members. These findings collectively indicated that the simulation experience significantly contributed to students' readiness for future performance in clinical practice, emphasizing skill competence, critical thinking, accountability, safety, and teamwork.



Graph 3: Impact of simulation on readiness for future performance in a clinical setup

Graph 3 illustrates that the overall impact of the simulation scenario on readiness for future performance in a clinical setting yields highly positive outcomes among nursing students. Most students (95%) reported feeling fully prepared and ready to apply the skills and knowledge gained through the simulation scenario in actual clinical settings. This strong sense of readiness suggests that the simulation experience not only boosted their confidence but also equipped them with practical competency essential for a real-world clinical setup. In contrast, a smaller proportion of students (5%) indicated that they were still developing their clinical skills and confidence and may require additional practice or experience to feel fully prepared. Importantly, none of the students reported feeling poorly prepared or needing further support before performing these clinical tasks, which highlights the overall effectiveness of the simulation program in bridging the gap between theoretical knowledge and clinical application.

These results underscore the importance of simulation as an effective and innovative teaching strategy that enhances self-confidence, fosters professional readiness, and prepares nursing students to meet the demands of a real clinical setting. By providing a safe and controlled space for deliberate practice and reflection, simulation helped students solidify their clinical skills, and greater student satisfaction with their educational experience ultimately contributes to improved patient care outcomes.

Inferential statistical analysis was performed using Pearson's correlation coefficient through the Data Analysis Toolpak *in* Microsoft Excel. This analysis aimed to examine the correlation between students' demographic variables and learning experience, confidence, and readiness for future performance in clinical setups. The results revealed a statistically significant positive correlation between familiarity with the equipment used in the simulation scenario and confidence levels ($p = 0.039$), indicating that increased familiarity with the equipment was associated with higher confidence levels in performing clinical tasks during simulation.

IV. Discussion:

The findings of this study demonstrated a highly positive impact of simulation scenarios on myocardial infarction (MI) management on nursing students' learning experience, confidence, and readiness for future performance in a clinical setting. A significant majority of students (95%) rated the simulation as an excellent learning method, highlighting its effectiveness in enhancing their engagement and knowledge retention. This is consistent with existing literature, which identifies simulation as a powerful pedagogical tool that supports experiential learning, critical thinking, and safe skill application in complex clinical situations. A quasi-experimental study on nursing students, comparing simulation-based training for cardiac arrest with traditional lectures. The simulation group showed significantly higher scores in knowledge, self-confidence, and clinical performance, suggesting it is a more effective educational method and should be applied to diverse clinical scenarios.[29] Another study concluded that when actively engaged, students can enhance learning outcomes and retention, which conveyed high levels of satisfaction and self-confidence, and enhanced their critical thinking skills following the HFS experience.[30-31]

The data revealed that 93% of students reported feeling completely confident in managing myocardial infarction as a critical simulation scenario. This high level of confidence is particularly significant, as confidence plays a crucial role in clinical decision-making and overall patient care competence. Similar findings were reported when simulation-based education incorporated repeated scenarios for specific conditions and allowed students to make mistakes in a safe environment without fear of harming patients.[32] These findings align with a study conducted by Tarhan and Yildirim (2023), which found that repeated multi-patient simulations significantly improved self-confidence and professional readiness among senior nursing students. This suggests that such experiences closely mirror real-world healthcare demands and better prepare students for clinical practice.[33]

Moreover, students' readiness for future performance in clinical settings was significantly positive, with 95% indicating that they were entirely ready to apply the skills they had learned during the simulation scenario. This result demonstrates the simulation's success in bridging the theory-practice gap and promoting clinical preparedness, a challenge that remains ongoing in nursing education. The findings also suggest that familiarity with the tools contributed to the increase in confidence level. Repeated and structured simulation exposure contributes to a deeper understanding, increased confidence in handling acute situations, and improved team coordination.[34] Despite these promising outcomes, a small percentage of students (5%) rated their learning experience as average, and 5% reported an average level of confidence. These variations may reflect individual learning styles, prior clinical experience, or comfort with simulation technology. Hence, faculty need to recognize and address these differences through tailored support and varied simulation scenarios that cater to the diverse needs of students.

In summary, the results confirm that the simulation is an effective teaching strategy for enhancing learning, confidence, and readiness for future clinical performance among nursing students. This underlines the importance of incorporating regular, structured simulation into nursing curricula to bridge the gap between theory and practice effectively and better prepare students for the complexities of real-world healthcare, especially in critical and emotionally charged situations such as end-of-life care.

V. Limitations:

Participants went through a short, timed simulation, which might not fully show the ongoing mental and physical fatigue they would face in real situations and may have limited how flexible they could be in making decisions.

VI. Conclusion:

By providing a safe, controlled, and immersive environment, simulation allows students to actively engage in complex clinical scenarios, reflect on their actions, and improve performance without the risk of harm to patients. This study demonstrated that simulation had a significant and positive impact on nursing students' learning experience, confidence, and readiness for future clinical performance. Most students reported high levels of confidence and readiness following the simulation. These findings underscore the importance of simulation as an effective and engaging educational strategy that not only enhances theoretical understanding but also develops the practical skills and self-confidence essential for real-world clinical practice.

Consent to participate: Informed consent was obtained from each participant. All methods were performed in accordance with the relevant guidelines and regulations.

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Conflicts of interest: None.

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Individual author contribution statement: Dr Meena Ganapathy was the primary author and was involved in all stages of the study, including conceptualization, methodology, data curation, analysis, and manuscript drafting. Mrs. Nupoor Bhambid and Mrs. Shital Padalkar performed the statistical analysis, created the Fig.s, and wrote the manuscript. All authors read and approved the final manuscript.

Declaration of generative AI and AI-assisted technologies in the writing process: During the preparation of this work, the author used ChatGPT (OpenAI) to improve readability and language.

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"A study to assess correlation between screen time and sleep quality among students at selected nursing institute of Pune city."

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Abstract: Introduction: *Sleep is an essential physiological process crucial for physical, cognitive, and emotional well-being. Increased screen time, particularly before bedtime, has been linked to sleep disturbances in many studies. Nursing students are especially vulnerable due to academic workload, irregular schedules, and extensive use of digital devices. This study aimed to assess sleep quality, evaluate screen time, and examine the correlation between screen exposure and sleep quality among nursing students.* ***Objectives:*** *1. To assess the sleep quality among college-going students. 2. To evaluate screen time among students. 3. To determine the correlation between screen time and sleep quality.* ***Methods:*** *A quantitative, descriptive correlational study design was approached. Data was collected from 70, third year GNM students at Maharshi Karve Stree Shikshan Samstha's Bakul Tambat Institute of Nursing Education, Pune. The research tool included demographic data, Pittsburgh Sleep Quality Index (PSQI), and Structured Screen Time Assessment Questionnaire. Data were analysed using descriptive statistics (frequency, percentage, mean, SD) and inferential statistics (Pearson's correlation coefficient) ($p < 0.05$.)* ***Results:*** *Majority of students were aged 20–21 years (68.57%) and resided with families (52.85%). Sleep assessment showed 42.85% with moderate difficulty, 27.14% with severe difficulty. Smartphones were the most used device (85.5%), with social media being the primary activity (62.9%). The correlation analysis revealed a weak positive correlation ($r = 0.08$) between screen time and PSQI scores, which was not statistically significant ($p > 0.05$). This indicates that, in this sample, screen time was not a strong predictor of sleep quality.* ***Conclusion:*** *Although a large proportion of nursing students experienced poor sleep quality, screen time did not show a significant correlation with sleep quality. This suggests that sleep disturbances are likely multifactorial. Health education on screen hygiene and sleep practices is recommended to improve well-being and academic performance.*

Keywords: *Screen time, Sleep quality, Nursing students, PSQI, Correlation*

I. Introduction:

In the 21st century, digital technology has become a big part of everyday life. People use smartphones, laptops, tablets, and televisions not only for chatting and fun but also for learning, working, and staying in touch with others. More and more people, from kids to older adults, are relying on these gadgets, and it's changing the way everyone lives. Among all age groups, young adults and college students are the most affected. They have to manage school, friends, and personal matters, which makes them more exposed to screens. The term "screen time" means how much time someone spends using devices with screens, like televisions, computers, laptops, and smartphones.[1]

Using screens in a balanced way can be good for education, communication, and sharing information. For example, digital tools help students find online lessons, talk with classmates, and learn new skills. But when screen use is too much and not controlled, it becomes a serious health issue. The World Health Organization (WHO) and the American Academy of Pediatrics suggest that teenagers and young adults should not spend more than two hours a day on recreational screen time.[2] However, most students go beyond this limit, and smartphones are the main reason for this.

Sleep quality among adolescents and young adults has been affected now adays. The World Health Organization (WHO) recommends that young adults should sleep at least 7–9 hours daily, while recreational screen time should be limited to not more than 2 hours per day.[3] However, multiple studies have shown that actual usage far exceeds these limits. A systematic review and meta-analysis of 55 studies with more than 21,000 participants across countries like Germany, the United States, and India demonstrated a strong association between electronic media use and poor sleep quality.[4]

More time spent on screens affects the quality of sleep for students today. Even though digital tools help with communication and learning, using them too much can mess up sleep schedules, especially for young adults and nursing students. Hence, the objective of the study was to assess the effect of screen time on sleep quality among nursing students.

II. Methodology:

A quantitative approach and descriptive correlational research study design were adopted. The data was collected from 60 third-year GNM students from a nursing institute in Pune city. The consent was taken from the samples. The sampling technique employed by the study was a non-probability purposive sampling technique. The research tool included: Demographic Data, Pittsburgh Sleep Quality Index (PSQI),[5] and Structured Screen Time Assessment Questionnaire.

III. Results/ findings:

This section deals with demographic data, sleep quality and screen time and its correlation among nursing students. The majority of students were aged 20–21 years (68.57%) and resided with families (52.85%). Sleep assessment showed 42.85% with moderate difficulty, 27.14% with severe difficulty, and only 1.42% reporting no difficulty. Smartphones were the most used device (85.5%), with social media being the primary activity (62.9%). The correlation analysis revealed a weak positive correlation ($r = 0.08$) between screen time and PSQI scores, which was not statistically significant ($p > 0.05$). This indicates that, in this sample, screen time was not a strong predictor of sleep quality. Other factors such as academic stress, lifestyle, and environmental conditions may have influenced outcomes.

Table 1. Frequency distribution of sleep quality

N=70

S.N.	SLEEP QUALITY	FREQUENCY (*f*)	PERCENTAGE (%)
1	No sleep difficulty (0)	1	1.42%
2	Mild sleep difficulty (1-7)	20	28.57%
3	Moderate sleep difficulty (8-14)	30	42.85%
4	Severe sleep difficulty (15-25)	19	27.14%
	Total	**70**	**100**

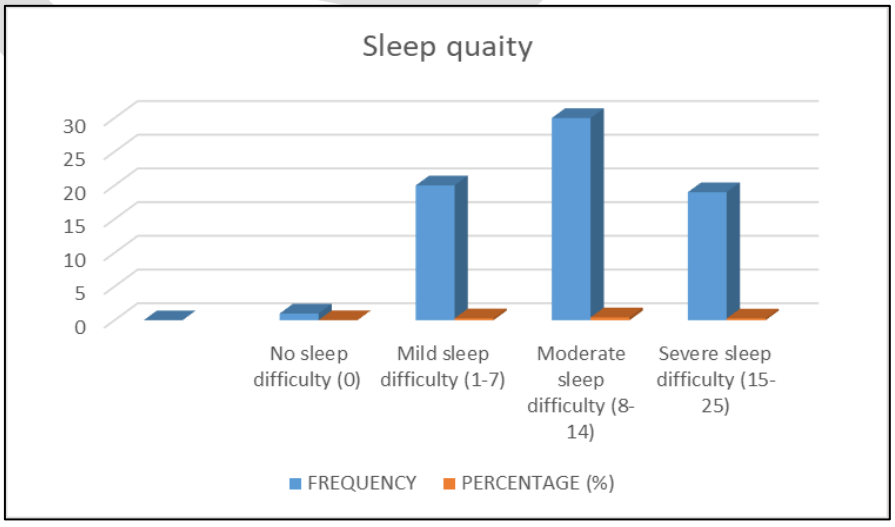

Fig. 1: Frequency distribution of sleep quality

Table 2: Type of screen is used by nursing students.

N=70

S.N.	Type of screen	*f*	%
1.	Smartphone	54	**77**
2.	Computer	2	**3**
3.	Laptop	4	**6**
4.	Television	10	**14**

Smartphones were the most commonly used screen device, reported by 77% of students, followed by television (14%). Only a small proportion used laptops (6%) and desktop computers (3%). These findings indicate that digital exposure among students is predominantly concentrated on mobile devices.

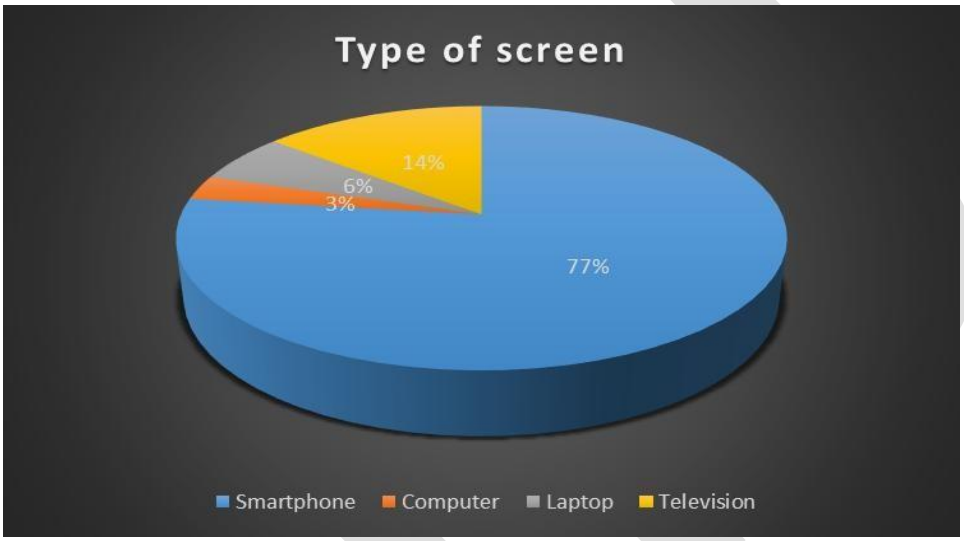

Fig. 2: Type of screen used by nursing students.

Table 3: Screen time (in hours) in nursing students

S.N.	Screen time	*f*	%
1.	Less than 4 hours	54	70
2.	4-6 hours	15	20
3.	6-8 hours	01	01
4.	More than 8 hours	07	09

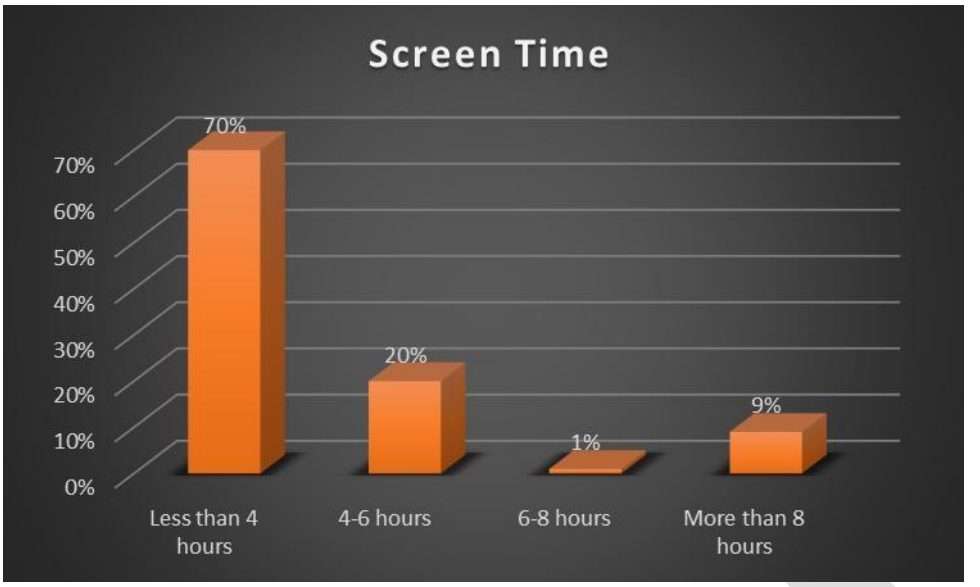

Fig 3: Screen time in nursing students

Most students (70%) reported less than 4 hours/day, while 20% reported 4–6 hours. 9% using 6-8 hours and only a small i.e.,1% exceeded 6 hours. This shows that although the majority have moderate usage, a subset of students is at risk of excessive exposure.

Table 4: Sleep quality of nursing students

S.N.	Sleep Quality	Frequency	Percentage
1	No sleep difficulty (0)	1	1.42%
2	Mild sleep difficulty (1-7)	20	28.57%
3	Moderate sleep difficulty (8-14)	30	42.85%
4	Severe sleep difficulty (15-25)	19	27.14%

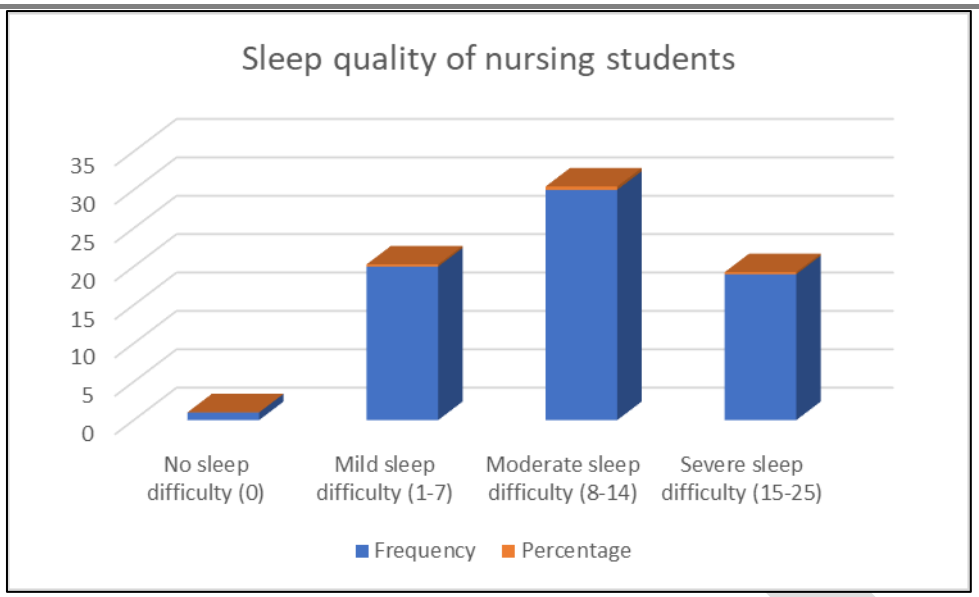

Fig 4: Sleep quality of nursing students

Table 5: Mean and SD of Screen Time and PSQI Score

Variable	N	Mean	SD
PSQI Score	70	2.01	0.86
Screen Time	70	0.27	0.62

The above table shows that the average PSQI score of students was 2.01, suggesting that most participants reported average to slightly poor sleep quality. The mean screen time was 0.27, which corresponds to less than 4 hours per day for most of the participants. Correlation Analysis: To test the hypothesis regarding the relationship between sleep quality and screen time, Pearson's product-moment correlation coefficient was computed.

Table 5: Correlation between PSQI Score and Screen Time

Variable 1	Variable 2	N	r – value	P
PSQI	Screen Time	70	0.08	>0.05

The correlation coefficient (r = 0.08) indicates a very weak positive relationship between PSQI and screen time. The p-value is greater than 0.05, which means the correlation is not statistically significant. Thus, it can be inferred that screen time does not significantly affect sleep quality among the studied sample.

IV. Discussion:

The analysis demonstrated a weak, positive, and statistically non-significant correlation between screen time and sleep quality ($r = 0.08$, $p > 0.05$). This finding indicates that, among the 70 students studied, screen time alone was not a significant determinant of sleep quality. The minimal strength of the association suggests that other psychosocial and behavioural factors may exert a more substantial influence on sleep outcomes and warrant further investigation. Liebig, L., Bergmann, A., Voigt, K. et al conducted a cross-sectional study on "Screen time and sleep among medical students in Germany." Medical students represent a vulnerable population for adopting unhealthy behaviours due to high academic stress.

Prolonged screen time has been linked to adverse health outcomes, particularly delayed sleep onset, reduced sleep duration, and impaired sleep quality. A cross-sectional, online questionnaire-based study was conducted to examine the relationship between screen time and sleep parameters among medical students at the Technical University of Dresden. Correlation coefficients, linear regression, and mixed-effects models were used for data analysis. A total of 415 students (mean age: 24 years; 70% female) participated in the study. The participants reported an average daily screen time of 7 hours and a mean sleep duration of 7.25 hours per night. Nearly one-quarter of the students (23%, n = 97) reported sleeping less than 7 hours per night, while 25% (n = 105) reported fair to very poor sleep quality. Increased leisure-related screen time was significantly associated with later bedtimes ($r = 0.213$, $p < 0.001$), whereas greater screen time spent on study or work was associated with shorter sleep duration ($r = -0.108$, $p < 0.015$). No significant association was observed statistically between total screen time and sleep quality ($p = 0.103$).[6]

Although existing theoretical models and prior empirical studies commonly report an adverse effect of excessive screen exposure on sleep quality—primarily through mechanisms such as circadian rhythm disruption and poor sleep hygiene—the present study did not observe a significant relationship. This difference may be explained by many factors. First, the average daily screen exposure in the sample was relatively low, with the majority of participants reporting less than four hours per day, potentially limiting its impact on sleep. Second, sleep quality is a multifactorial construct and may be more strongly affected by variables such as perceived stress, academic workload, lifestyle patterns, and environmental conditions. Finally, reliance on self-reported measures, including the Pittsburgh Sleep Quality Index (PSQI)[5] and self-estimated screen time, may have introduced reporting bias, thereby influencing the observed association.
The present study confirms that screen time, particularly before bedtime, has a significant negative impact on sleep quality among nursing students. Implementation of sleep hygiene education and digital wellness strategies is recommended to enhance the health, academic performance, and well-being of students.

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"Current global and India's challenges and need for caregiver trainings for elderly care to meet the future gap: A literature review."

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Abstract: *Globally, elderly population are shifting with increasing life expectancy and better medical provision around the world. United Nation had declared 2021 to 2030 as the decade of elderly and called for attention toward the needs of elderly care and requirements for caregiver training to improve overall quality of life for elderly people. Our elder population for better quality of life, will be requiring more caregiver who can be paid or unpaid, a close relative or friends, a volunteer or professionally trained caregiver. This review explores the current global and Indian's perspective on the need of training of caregiver for elderly person and its relevant caregiver training component.*

Keywords: *Caregiver training, elderly person, caregiver training components.*

I. Introduction:

Around the world, demographic shift in aging population is happening due to many factors. With increasing life expectancy among global as well as India, there will be more elderly population globally and locally. The government policy and infrastructure much meet such demands of this vulnerable population while keeping in mind its future challenges as well. Among such challenges is the lack of trained caregiver to provide care to elderly person at home, institution, and community level in an age friendly health infrastructure. Above this, the changing demographic shift demands not just more caregivers, but better-prepared caregivers who are equipped with skills grounded in evidence-based practice, empathy, and culturally sensitive caregiver. Hence a caregiver training based on the evidence-based components need to be implemented at local areas, state, and national level along global initiatives. Caregivers for elderly care are those who provide all basic health care to elderly people who need some degree of ongoing assistance with everyday tasks i.e. activity of daily living on a regular basis. Caregivers are cornerstone of elderly care.

Caregiver for elderly can be:

1. Informal carer or family/ relatives/ friend
2. Volunteer unpaid caregiver
3. Paid formal caregiver.
4. Health care assistant in geriatric sectors
5. Professionally trained personal

II. Rationales for caregiver training for elderly person:

As elderly people lived with old age related physiological degenerative changes and additional comorbidity, the older people required more robust care services that meet their unique needs of intensive level. As per International Institute for Population Sciences (IIPS), the rate of non-communicable diseases (NCDs) is rising globally and in India, there is a major concern for vulnerable elderly population and Longitudinal Ageing Study in India (LASI) survey 2018 listed NCDs includes heart disease, chronic lung disease, cancer, diabetes, and mental and neurological conditions, such as dementia.[2] Additionally, the changes in the care needs of older people and lack in the availability of family care, means that the demand for support from outside the family is rising. Such finding is leading to global and local discussion about the care responsibility requirement for elderly care, and as a shared responsibility of elderly care services between state, community, family and individuals. One of the ways in which they can and are doing this is by identifying, training, and organizing volunteer caregivers to deliver care or by providing information, support, and advice to prove support to informal caregiver of elderly. There is lack of caregiver support that meet their personal need leading to compromise the quality care of elderly and indicated a need for including caregiver support as component of caregiver training in telehealth services.[5]

The following points highlighted the need for caregiver trainings and support:

- Rising percentage of elderly population increases the growing demand for trained professionals in old age care and to address these unique health, social, and emotional needs of seniors.
- Urbanization and smaller family units: elderly individuals no longer have the support of a large family, resulting in greater challenges in caregiving in Indian urban population.
- Elderly individual being isolated especially in urban areas with lack of support from family.
- Increased longevity and complex health needs
- Emotional and social well-being: a higher risk of isolation, depression, and loneliness among elderly.
- Need for specialized skills: and this requires caregivers to be knowledgeable in multiple aspects of health care, safety, legal considerations, and emotional support.
- A cultural paradigm from informal family caregiver to professional care giver for elderly care.

III. Current trends, issues, and challenges:

India recorded a significant improvement in life expectancy at birth, which was 47 years in 1969, 60 years in 1994 and 69 years in 2019. The share of population of elderly was 8% in 2015 i.e., 106 million (10 crores plus) across the nation, making India the second largest global population of elderly citizens. In 2024, there were an estimated 1.18 billion people aged 60 years or over in the world (14.5% of the global population).[1-3] The share of the elderly population is projected to further rise to 19.5% (319 million) by 2050 in India. The death rate for the elderly age 60 and above is 38.4 deaths per 1000 population in India. (LASI wave 1 2017-18).[2] With around 6 lakh people over the age of 100, India is expected to have the highest number of centenarians by 2050. There is an increased number in senior citizen from 10.38 crores in 2011 to an projection of 17.3 crore in 2026 and 30 crore in 2050.[1-3] The UN Population Division (2019) projects global life expectancy to reach 74.5 years for males and 79.1 years for females in 2050.[4.]

As per research survey by Government of India i.e., LASI 2018, it highlighted various issues as follows:

- Rising prevalence of chronic noncommunicable diseases among individuals aged 45 - 54 years and 55 - 64 years, increase health burden.[2]
- Rising dependency ratios leading to higher caregiving demands and declining family support system.[2]
- Inadequate and Limited age friendly geriatric health care infrastructure, especially in rural and semi-urban settings.[2]
- Globally a need to discuss about how responsibility for care should be split between individuals, families, communities, and the government.[2]
- Economic insecurity, elderly person abandonment and neglect. (Kardile MS 2015).[6]

These issues and trends underscore the need for preventive and rehabilitative care competencies among caregivers.

Challenges:

As per Rahman MI, Alam J, and Emdad FB ,2025 scoping review study on challenges of elderly caregiving in the Indian Subcontinent, listed the following:

- Limited access to healthcare services,
- High rates of multimorbidity,
- Significant caregiver burden,
- And difficulties in adopting new health technologies.
- Inadequacies in healthcare infrastructure,
- The impact of socioeconomic factors, and financial barriers
- Urban–rural disparities, and cultural norms,
- Complicated caregiving as result of comorbidity

Elderly challenges in care: Google image

Challenges in caregiver training of old persons can be:

- Lack of alternative mode of training.
- Lack of well-equipped training centre and qualified trainers.
- Lack of evidenced based intervention components within training.
- Underutilization of government scheme and its lack of awareness among beneficiaries.
- Difficulty to navigate complex health care systems by elderly population for health services of available facilities.

Challenges face by caregiver can be:

- Physical and emotional strains of caregiver.
- Social isolation due to care demands of housebound elderly with chronic disability.
- Lack of caregiver knowledge and essential skills required for providing quality elderly care that promote healthy aging.
- Financial burden to provide support for long term care of elderly.
- Caregiver burnout leading to compromise care and further complications.

Emine Aksoydan et al systematic review 2019, pointed out that an evidence-based caregiver training can improve the patient's quality of life while reducing care costs, while supports intervention tailored within its training can reduce caregivers' stress.[8]

Research literature review was conducted on core components of caregiver trainings. A summary of the research findings was given in the table 1. as follows:

Table 1. Core components of caregiver trainings as per research literature review findings.

	Core components of caregiver trainings	Authors and study year	Findings
1.	Comprehensive geriatric education modules:	Skye Marshall, 2017.	Training includes group education, skill-development workshops, telehealth. They are in well positioned to do monitoring, dietary management and improve health related outcome.[9]
		Mena-Napoles E et al 2022.	Preventive education training including knowledge of risk factors and first aids help improve in skill among caregiver skills.[10]
		Katherine S. Judge et al. 2010	Strength based approach caregiving dyads received skills training including communication, memory, emotional and behavioral management.[11]
		Linda W Samia, 2019	Program to enhance problem solving skill, planning skills and self-efficacy. Caregivers demonstrated significant improvement in competence, personal gain, self-efficacy, and symptoms of depression at 5 months post-program.[12]
		Patrick Pui Kin Kor et al, 2024	Family caregivers could be trained to provide cognitive stimulation at home for people with dementia, which could benefit both parties.[13]
		Kristine N Williams et al., 2023	family caregiver telehealth intervention of communication behaviors for dementia elderly was effective in identifying specific communication strategies.[14]
		Aparna Kanmani S et al 2025	a caregiver-driven Cognitive training program called the Individualized Cognitive Augmentation Regimen for Elderly (iCARE) as model to empowering caregivers as co-therapists through adequate training, thereby reducing the existing treatment gap for dementia in India.[15]
2.	Psychoeducational intervention	Julian Montoro-Rodriguez et al. April 2025	Psychoeducational program on Self-efficacy, personal gain and emotional supports mediated change in depression, anxiety and burden among caregivers.[16]
		2015, The Gerontologist	Culturally tailored psychoeducational on knowledge of dementia and Alzheimer disease.[17]
		Sara J Czaja et al 2018	Multicomponent psychosocial intervention, which involved six individual face-to-face and six individual telephone sessions.[18]

	Erik Walter et al., 2020	Psychoeducation and multicomponent interventions affected most outcomes.[19]
	Tony Rosen et al., Feb 2025	Addressing the mistreatment, abuse, and neglect by caregiver among elderly.[20]
3. Approach and modalities:	Kenneth Hepburn, 2022	Tele-Savvy is delivered over 43 days to groups of 6–8 caregivers in 7 weekly synchronous sessions accompanied by 36 brief asynchronous video lessons for enhancement of caregiver mastery.[21]
	Jennifer M Reckrey et al., 2024	Deliberate cultivation of person-centered and family-centered home care may help maximize the positive impact of paid caregivers on people with dementia and their families.[22]
	Baruah, U., Shivakumar, P.,2020	Acceptability of an online training and support program for dementia caregivers in India-Use of simple language, cultural relevance, and an interactive design were suggestions to facilitate the use of the support program. Lack of time, difficulty in accessing the internet, lack of awareness about the portal, difficulty in reaching the rural population were anticipated as challenges in using the program.[23]

IV. Caregiver training for elderly can includes the following core components:

1. General Foundation-

- Understanding the healthy ageing process.
- Person-centered care: valuing older adults' preferences and needs, goals.
- Legal, ethical, elderly rights-based framework

2. Clinical and Practical Skills components:

- Activities of Daily Living (ADL) and mobility assistance
- Safe positioning, transfer, fall-prevention and pressure-ulcer care
- Physical Therapy: Assist with prescribed exercises or rehabilitation.
- First aids and emergency management.
- Basic health monitoring, nutrition, and infection control skills.
- Use of assistive devices, mobility aids; adapting environmental safety.

Caregiver needs: Google image.

3. **Communication, Emotional & Cognitive Support**:

- Effective communication: listening, empathy, adapting to cognitive impairments (e.g., dementia)
- Companionship
- Support for cognitive health: reminding, stimulating memory, helping older adult remain engaged.
- Emotional & psychosocial support

4. **Specialized Geriatric Modules**

- Management of chronic diseases common in older adults
- Dementia and cognitive decline care
- Palliative care, crisis management, disaster preparedness

5. Self-Care, Ethics & Professionalism for Caregivers

- Training caregivers about selfcare and stress management.
- Ethical practice, confidentiality, respecting autonomy of older adult.
- Professionalism: role clarity, documentation, communication with healthcare team, continuous learning.

6. Collaboration and coordination

- Collaboration with health, social, community services: referral pathways, home care services, institutional care linkages.
- Understanding policies, schemes, and caregiver workforce development e.g.: National Institute of Social Defence / Ministry of Social Justice & Empowerment.
- Use of technology/telehealth for caregiver support and training, especially in remote areas

7. Evaluation and continuous improvement

- Assessment of caregiver competency and older adult health related outcomes and satisfaction.

- Refresher modules, mentoring, peer support networks and supervision.
- Getting certified from recognized training institute.

8. **Miscellaneous:** errand and shopping, light housekeeping duties

Trainings about dementia, medication and stress management were identified as the most needed trainings to improve caregivers' competence. Alzheimer's/dementia care and home safety were the most provided trainings (73% and 60%, respectively).[24]

V. Global guideline and initiatives for caregiver training:

WHO global strategy and action plan for elderly (2016 – 2030):

- Promotes integrated care for older people (ICOPE) emphasizing capacity building of caregivers and community health workers.
- Advocates for person-centered and rights-based care.
- WHO isupport for caregiver training in dementia.
- WHO launched an online course webinar event on 22 October 2025 for caregiver training.

UN Decade of Healthy Ageing (2021–2030)

- One of its action areas focuses on strengthening long-term care systems, which includes caregiver training as a central pillar.
- The National Institute on Aging (USA) and NHS England have developed structured caregiver training curriculums integrating EBP, dementia management, and emotional support modules.

VI. India's initiatives and schemes:

- For the fiscal year 2025-2026, a total of ₹9,652 crore was allocated to the National Social Assistance Programme (NSAP) which provides pensions and support for the elderly.
- Atal Vayo Abhyuday Yojana (AVYAY): This scheme, allocated ₹289.69 crore in the 2025-2026 budget, supports various initiatives including the operation of senior citizen homes, mobile Medicare units, and caregiver training.
- Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (AB-PMJAY): free healthcare coverage of up to ₹5 lakh per year to all senior citizens aged 70 and above.
- Rashtriya Vayoshri Yojana (RVY): This scheme provides free physical aids and assisted-living devices to eligible senior citizens from BPL (Below Poverty Line) families or those with a monthly income of less than ₹15,000.
- National Programme for Healthcare of the Elderly (NPHCE): This programs scheme take into account of financial security, food, health care and human interaction /life of dignity. Eg: National Action Plan for Welfare of Senior Citizens
- National Institute of Social Defence (NISD), an autonomous body is expected to be the resource centre on senior citizens in the country.
- National Policy for Senior Citizens (NPOP), National Council for Senior Citizens (NCOP) facilitate formation of Elderly support groups named "Sanjeevini" and elderly care giver support groups.
- Integrated Programme for Senior Citizens was introduced by the Ministry of Social Justice and Empowerment in 1992, as revised from time to time. The main objective of the Scheme is to improve the quality of life of senior citizen.
- The 'RashtriyaVayoshriYojana' (RVY) was launched w.e.f. 01/4/2017, for providing physical aids and assistive living devices viz. walking sticks etc.
- Vayoshreshtha Samman Awards are National Awards which are conferred to eminent Senior Citizens and Institutions for rendering best services to senior citizens each year from 1999.

- Indira Gandhi National Old Age Pension Scheme (IGNOAPS) is implemented by the Ministry of Rural Development National Old Age Pension Scheme under National Social Assistance Programme since 1995.
- National Programme for Health Care of the Elderly (NPHCE) -the Ministry of Health and Family Welfare launched National Programme for Health Care for Elderly in 2010 and this Programme is dedicated for providing primary care to elderly above 60 years of age.
- PM-Special Training of Geriatric Caregivers scheme is to generate more professional caregivers like geriatric caregiver, geriatric caretaker, care companion etc. And this training can be access through Skill India Digital Hub platform.
- Care Giver support: Funds from MGNREGS/Gram Panchayat /MUNICIPAL resources etc. be used to give TRAINED CARE-GIVER for the Elderly based on 1 Caregiver for 4 same sexed elderly to be helped 2 hours each for a man-day. Funds from labor welfare fund/CSR can also be used.

VII. Discussion and conclusion

The well-being of senior citizens is mandated in the Constitution of India under Article 41 and protected by the maintenance and welfare of parents and senior citizens act, 2007. Developed countries like Japan, Germany, and Sweden have well-established systems and comprehensive policies, Sweden's elderly care policy is governed by the Social Services Act of 1982 and has universal welfare system funded by public sector. Whereas in India, government scheme related underutilization and lack of awareness of government scheme among beneficiaries and caregiver seem to be a concern. With rising and shifting demographic projection as mentioned earlier, we need to equip our caregiver with training, whether they are relatives, paid or unpaid, primary caregiver or volunteers. Future need demands more age friendly infrastructure and more policy and program for elderly care globally and particularly in India.

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