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CONFERENCE PROCEEDINGS OF  
4<sup>TH</sup> NATIONAL CONFERENCE ON

**EMPOWERING NURSES'  
CARE BEYOND BORDER THROUGH  
DIGITAL AND WEARABLE  
TECHNOLOGIES IN TRACKING AND  
MANAGING EMERGENCIES**

ORGANIZED BY

**SRI MANAKULA VINAYAGAR  
NURSING COLLEGE**

EDITOR

**DR. G. MUTHAMILSELVI**

CO-EDITOR

**DR. R. SRIDEVI**

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## OUR INSTITUTION



Sri Manakula Vinayagar Nursing College was started in 2007 under Manakula Vinayagar educational trust by founder Shri. N. Kesavan. It is approved by the Tamil Nadu Nursing Council, Chennai and Indian Nursing Council New Delhi and is affiliated to Pondicherry University. Sri Manakula Vinayagar Nursing College is a top nursing college among nursing colleges in Puducherry located in the coastal town of Puducherry. The college offers a B.Sc. Nursing course at the undergraduate level and P.B.B.Sc (N), M.Sc. (N). The College provides quality education in the field of nursing and is considered to be one of the best nursing colleges in the state

SMVNC has a well-equipped infrastructure with laboratories, library, hostel, and canteen. It also provides sports facilities, medical facilities, and counseling services. The college has a highly experienced and qualified faculty that focuses on the overall development of the students for their better learning/ to enhance their learning experiences. Students gain their clinical expertise in their parent medical college hospital, a multispecialty with 1350 bedded. Also has MOU with ministry of health and faculty welfare for community health services along with non-governmental organization like Bharathamatha de-addiction center, Baby Sarah home, Pushpa Gandhi old age home, Anna Pradokshana Charitable Trust. SMVNC offers a wide range of extracurricular and co-curricular activities such as cultural activities, seminars, workshops, and conferences. These activities help students develop their skills and knowledge in the field of nursing. The college also provides internship opportunities and placement opportunities to its students.

SMVNC is committed to provide quality education to its students. It also focuses on providing students with the latest industry trends and updates. The college organizes various programs and activities such as health camps, awareness campaigns, and community service projects. SMVNC provides a safe and secure environment for its students and faculty. It has a well-equipped security system that includes CCTV cameras, security guards, and a 24/7 helpline. The college also has a code of conduct that promotes discipline and respect among students and staff.

## CHAIRMAN'S MESSAGE



Sri Manakula Vinayagar Educational Trust was formed with the objective of imparting quality technical education, medical education and other relevant field of education especially to the weaker section of the society.

The Trust is sponsoring the colleges with the state of art facilities and modern technologies for making the students employable as well as to become successful entrepreneurs. We are running all the colleges in the highest order of discipline among the students and personally take care of their studies & successful completion of the course. We take utmost care about student future and long-term professional relationship.

Our colleges have to highest order of discipline, won the reputation, gold medalist and ISO Certification, opinion of public and industrialists. That is the success of our institutions which makes us to be a leader in the field of Education.

### **Theme of the National Conference**

### **“Empowering Nursing Care Beyond Borders through Digital and Wearable Technologies in Tracking and Managing Emergencies”**

This conference aims to explore the transformative role of emerging technologies in modern nursing practice. With the integration of Artificial Intelligence (AI), digital health platforms, and wearable devices, healthcare delivery is becoming more efficient, accurate, and patient-centered.

AI contributes significantly to clinical decision-making, early detection of health risks, real-time monitoring, and improved communication systems. Wearable technologies enable continuous patient tracking, enhancing emergency response and long-term care management.

## PRINCIPAL'S MESSAGE



Nursing is a noble profession among all health professions and plays a vital role in determining national health outcomes. Nurses dedicate and sacrifice their lives in serving mankind with compassion and commitment. They possess qualities such as simplicity, humbleness, kindness, trustworthiness, and dedication, which make them an essential part of the healthcare system. Sri Manakula Vinayagar Nursing College was established in the year 2007. The college offers Basic B.Sc. Nursing, Post Basic B.Sc. Nursing, and M.Sc. Nursing programmes. It is affiliated with Pondicherry University. The institution focuses on the holistic personality development of students by encouraging not only academic excellence but also participation in co-curricular activities like yoga, Indian Knowledge Systems such as Adimurai and Silambam, and various extracurricular activities. The college is committed to inculcating strong moral and ethical values among students, which are highly essential in the nursing profession.

During the course of study, students engage in diverse learning activities to understand both the art and science of nursing. With state-of-the-art simulation and skill laboratories, students gain experiential learning and develop critical thinking abilities required for professional nursing practice. The college provides quality education along with modern facilities and services that support students and prepare them for success in today's competitive healthcare environment. The institution also strives to improve accessibility to facilities for students, staff, volunteers, and members of the community with disabilities. The theme of this conference, "Empowering Nurses – Care Beyond Borders through Digital and Wearable Technologies in Tracking and Managing Emergencies," highlights the importance of integrating advanced technologies into modern nursing practice. Digital innovations such as Artificial Intelligence and wearable health devices help nurses in real-time monitoring, early detection, prompt emergency interventions, and effective clinical decision-making, ultimately ensuring better patient care and outcomes.

**4<sup>th</sup>National Conference on**  
**“Empowering Nursing Care Beyond Borders through Digital and Wearable**  
**Technologies in Tracking and Managing Emergencies”**

**Dear Delegates,**

It gives me immense pleasure to welcome you to the National Conference on **“Empowering Nursing Care Beyond Borders through Digital and Wearable Technologies in Tracking and Managing Emergencies,”** organized by Department of Medical Surgical Nursing, Sri Manakula Vinayagar Nursing College.

In the current era of rapidly advancing healthcare systems, the integration of digital innovations and wearable technologies has become essential in enhancing the quality and accessibility of nursing care. This conference aims to highlight emerging trends, innovative practices, and evidence-based approaches that empower nurses to deliver efficient, timely, and patient-centered care, especially in emergency situations.

The conference serves as a dynamic platform for sharing knowledge, presenting research findings, and engaging in meaningful discussions on the role of Artificial Intelligence, digital health tools, and wearable devices in transforming nursing practice. It also encourages critical evaluation of ideas and fosters collaboration among academicians, clinicians, researchers, and students.

The overwhelming response and participation from various institutions and delegates reflect the growing importance of technology-driven nursing practices in today’s healthcare environment.

We extend our heartfelt welcome to all distinguished speakers, delegates, and participants, especially those who have travelled from different parts of the country. We also express our sincere gratitude to our sponsors for their valuable support.

We hope this conference will provide enriching learning experiences, promote professional networking, and inspire innovative collaborations for advancing nursing care beyond borders.

**Best Regards,**

**DR. G. Muthamilselvi,**

Principal / Organizing Chairperson

Sri Manakula Vinayagar Nursing College, Puducherry

## **CONFERENCE INFORMATION**

### **Registration Desk**

The registration desk was located at the main entrance of the venue. The registration was carried out from 7.30 a.m. to 8.00 a.m. and was staffed throughout the conference hours for queries and assistance.

### **Pre-test**

The pre-test was conducted between 7.50 a.m. and 8.00 a.m. for all the participants. The average score obtained by the delegates was 35%.

### **Conference Sessions**

The conference sessions were conducted as per the schedule at the main venue. Each session was led by a chairperson and co-chairperson. The sessions focused on various topics including ethical and legal issues, rural healthcare challenges, remote patient monitoring, AI in emergencies, IOT applications, data privacy, leadership in digital health, and nursing informatics.

### **Inauguration**

The inauguration started at 9.25 a.m. with a welcome address, followed by the unfolding of the theme, felicitation, introduction of the Chief Guest, Observer and the chief guest address.

### **Scientific Paper Presentations**

The scientific paper presentations were conducted for both faculty and students from 11.30 a.m. to 1.30 p.m. in separate halls. Participants from various institutions presented their research work. The papers were evaluated by experts and the best papers were awarded by cash Prize. Total Abstract – 36

### **Poster Presentations**

The poster presentations were conducted for faculty and students between 12.30 p.m. and 1.30 p.m. in designated halls. The posters were evaluated and the best posters were awarded by cash Prize. Total Poster - 51

### **Programme**

The entire programme was conducted as per the schedule. Any changes in the programme were informed during the conference.

### **Refreshments**

Refreshments were arranged in the dining area.

Tea break was provided between 11.15 a.m. – 11.30 a.m. and lunch break between 1.35 p.m. – 2.30 p.m.

### **Post-test**

The post-test was conducted between 5.00 p.m. and 5.10 p.m. The score was obtained by delegates 90%

### **Valedictory Session**

The valedictory session was conducted from 5.10 p.m. to 5.30 p.m. followed by the distribution of prizes and certificates. For the Scientific Paper Presentation Faculty, a cash prize of Rs. 2000 was awarded for the First Prize, while the Second and Third Prize winners received certificates. The Scientific Paper Presentation Student, a cash prize of Rs. 1000 was awarded for the First Prize, and the Second and Third Prize winners were awarded certificates. And Poster Presentation Faculty, a cash prize of Rs. 2000 was awarded for the First Prize, and the Second and Third Prize winners received certificates. For the Poster Presentation Student, a cash prize of Rs. 1500 was awarded for the First Prize, while the Second and Third Prize winners were presented with certificates.

### **Certificates / Mementoes**

Certificates and prizes were distributed during the valedictory session to all participants.

### **Feedback**

At the end of the conference, feedback was collected from all delegates for their valuable suggestions.

### **Conclusion**

The conference concluded with the vote of thanks followed by the National Anthem at 6.00 p.m.

**Sincerely,**

**Dr. R. Sridevi**










Professor cum HOD,

Department of Medical Surgical Nursing,

Sri Manakula Vinayagar Nursing College.

# BROCHURE

### Our Eminent Speakers

Remote patient monitoring system and application in managing cardiac emergencies <b>Dr. Ashida. T. S.</b> HOD, Dept. of Cardiology, SMVMCH, Puducherry		08.30-9.30
Real-time remote patient monitoring and alarming system for obstetrical emergencies <b>DR. S. Vijayalakshmi,</b> Principal, Vijayesh Nursing College, Tamilnadu.		09.30-10.30
Enhancing emergency response in rural setting with IoT in pediatric emergencies <b>Prof. P. Shanmugasudivu,</b> Professor, Narayana CON, Andrapradesh		10.45-11.45
AI enhanced monitoring system in Psychiatric emergencies <b>DR. N. Balasubramanian,</b> Dean cum Principal, Malla Reddy CON, Telangana.		11.45-12.45
Ethical and Legal issues in digital and wearable technologies <b>DR. Nirmala. V.,</b> Principal, MES, CON, Kerala.		01.30-02.15
Data privacy, cybersecurity and patient safety <b>Mr. Raman. P.</b> ANS, HBCH & MNMCC, TATA Memorial Centre, Uttar Pradesh.		02.15-03.00
Nursing leadership in digital health transformation <b>DR. Pritha L.,</b> Vice-Principal, Sri Sathya Sai Institute of Higher Medical Sciences CON, Karnataka.		03.00-03.45
Nursing Informatics and clinical decision support systems <b>DR. Akhilesh Sharma.</b> Nursing Officer, Guru Teg Bahadur Hospital, NewDelhi.		03.45-04.30
Understanding the challenges in rural and remote health care <b>Mr. Jaiganesh. E.,</b> Asst. Professor, SMVNC, Puducherry.		04.30-05.15

### Registration Fee

Category	Early Registration	Late Registration
Ph.D. Scholar	600	650
Faculty	500	550
Staff Nurse	500	550
PG Student	400	450

Lunch : 100/- (Extra Payment)

### Scientific Paper presentation

- Original research articles related to the conference topic.
- Abstract should not exceed 250-300 words, typed in English, font size 12, single line spacing.
- Abstract must follow the BMJ format: Introduction/Background, Methods, Results, Discussion / Conclusion.
- Each presentation will have a time limit of 8-10 minutes, followed by 2-3 minutes for questions.
- Best paper presentation awards will be given based on scientific content, innovation, clarity and relevance to the theme.

### Poster Presentation

- Posters should be relevant to the theme- "Wearable Health Devices and Digital Tools in Enhancing Timely Emergency Care".
- Posters should be creative, resourceful and self-explanatory and size: 4 x 3 feet.
- Posters should be printed on flex or vinyl materials. Hand-drawn posters are not permitted.
- Best poster awards will be given based on innovation, clarity, relevance to the theme and presentation style.

### Organizing Committee

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**DR. G. Muthamilselvi** BPharm, M.Sc., Ph.D., Principal, SMVNC, Puducherry


**Organizing Secretary**  
**DR. R. Sridevi** BPharm, M.Sc., Ph.D., Professor cum HOD, SMVNC, Puducherry

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**Mr. Jaiganesh. E.** BPharm, M.Sc., Asst. Prof., SMVNC     **Mrs. Sudhashini. J.** BPharm, M.Sc., Asst. Prof., SMVNC

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### Important Dates

Registration Starts from: 09.02.2026  
Last date of Registration: 28.02.2026  
Abstract Submission deadline: 27.02.2026



## 4<sup>th</sup> National Conference on Empowering Nurse's - Care Beyond Border through Digital and Wearable Technologies in Tracking and Managing Emergencies

3<sup>rd</sup> March 2026 @ Auditorium

**Chief Guest**  
**Dr. R. Rukkumani**  
Director- Research & Development Cell  
Professor- Dept. of Biochemistry & Molecular Biology

**Chief Patron**  
**Shri. M. Dhanasekaran**  
Chancellor, Tatkashala University, Tiruvannam, Tamil Nadu & Founder, Chairman and Managing Director, SMVE Trust

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**Dr. P. Sanjay** Dean (Research), SMVMCH     **Dr. M. Pragash** Medical Superintendent, SMVACC

**Organizing Chairperson**  
**DR. G. Muthamilselvi**  
Principal, SMVNC.

Tamilnadu Nurses & Midwives Council - 8 Credit Hours

**Sri Manakula Vinayagar Nursing College (SMVNC)**, Puducherry, is a premier ISO-certified institution committed to excellence in nursing education, research and professional development with the clinical strength of its parent hospital-Sri Manakula Vinayagar Medical College and Hospital (SMVMCH). SMVNC is recognized by the Indian Nursing Council / Tamilnadu Nurses & Midwives Council and affiliated to Pondicherry University, ensuring high standards in nursing education and academic excellence. SMVNC strives to prepare competent, compassionate and ethically sound nursing professionals who can meet the dynamic healthcare needs of society.

With a strong focus on academic quality, clinical exposure, innovation and research, the college fosters a learner-centered environment that promotes critical thinking, leadership and evidence-based practice. Through regular academic programmes, conferences, workshops and community outreach activities, Sri Manakula Vinayagar Nursing College continues to contribute meaningfully to the advancement of nursing education and healthcare services at the regional and national levels. Under the dynamic leadership of **Prof. Dr. G. Muthamilselvi**, Principal, the institution continues to uphold high standards in academic and professional nursing education.

### About National Conference

#### 4<sup>th</sup> National Conference on "Empowering Nurse's - Care beyond border through Digital and Wearable Technologies in Tracking and Managing Emergencies"

The conference aims to enhance nurses' competencies in utilizing digital platforms and wearable technologies to deliver care beyond traditional boundaries.

It facilitates the integration of technological advancements into contemporary nursing practice for effective tracking, monitoring and management of emergencies. The programme strengthens nurses' ability to continuously track patient data, analyze real-time information and identify early warning signs during critical situations. It emphasizes the importance of timely interventions during the golden hours to improve patient safety and survival outcomes.

The conference supports the provision of care beyond hospital settings, particularly in remote, rural and underserved areas. It promotes efficient communication, coordination and emergency tracking among multidisciplinary healthcare teams through digital systems. The event encourages innovation and adoption of technology-driven nursing practices. It improves patient safety, continuity of care and emergency preparedness. The conference also builds leadership and professional competence

among nurses. Overall, it contributes to improved healthcare outcomes at both community and national levels. As a National Conference, eminent speakers and experts from various states across India will contribute their knowledge, experiences and innovative ideas, fostering knowledge exchange and strengthening national perspectives in advanced nursing and emergency care practices.

### Objectives of the National Conference

- To enhance nurses' knowledge on the application of digital health and wearable technologies in tracking and managing emergency situations.
- To empower nursing professionals to deliver timely and effective care beyond geographical boundaries through technology-enabled practices.
- To provide nurses with the knowledge to track patient conditions and ensure timely referral to accessible healthcare facilities, enabling effective emergency care, especially in remote and underserved areas.
- To strengthen nurses' competencies in emergency preparedness, remote monitoring and rapid clinical decision-making.
- To foster leadership and professional development among nurses in advanced and technology-enabled healthcare systems.
- To promote evidence-based and technology-driven intervention in specialty-specific emergency and disaster care settings.

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## **KEY NOTE ADDRESS SESSION**

### **Session - 1**

## **ETHICAL AND LEGAL ISSUES IN DIGITAL AND WEARABLE TECHNOLOGIES**

**Kripa Angelin A**

Mahatma Gandhi Medical College and Research Institute, Puducherry

### **Abstract**

Digital wearable technologies are transforming healthcare by enabling real-time monitoring, data analysis, and improved emergency management. These devices track vital parameters such as heart rate, oxygen levels, and glucose, allowing early detection of health abnormalities. They support rapid response during emergencies through instant alerts and continuous monitoring. Wearable technologies enhance patient safety, promote healthy lifestyles, and reduce hospital admissions. However, challenges such as data privacy risks, inaccurate readings, false alarms, and high costs limit their effectiveness. Legal concerns include data protection, informed consent, device regulation, and professional liability. Ethical issues such as confidentiality, patient autonomy, equity, and privacy intrusion must be carefully addressed. Overdependence on technology may also impact clinical judgment and patient behavior. Implementing safety measures like secure data practices and proper device selection is essential. Overall, balancing technological benefits with ethical and legal considerations is crucial for safe and effective healthcare delivery.

### **Overview of the Content**

Digital wearable technologies are smart electronic devices worn on the body that use sensors, software, and wireless connectivity to collect, monitor, analyze, and transmit data in real time. These devices play a significant role in tracking health parameters, improving communication, and supporting emergency management in healthcare settings.

### **Role in Tracking and Managing Emergencies**

Wearable devices continuously monitor vital signs and detect abnormalities at an early stage. They provide instant alerts to patients, caregivers, and healthcare providers, enabling rapid medical response and prevention of serious complications.

### **Examples of Wearable Technologies**

- Heart rate monitoring
- Blood oxygen monitoring
- Blood glucose tracking
- Sleep monitoring
- Remote patient monitoring

### **Merits of Wearable Devices**

- Enable early detection of health problems through continuous monitoring.
- Provide 24/7 tracking of vital signs such as heart rate, sleep, and activity.
- Offer emergency features like fall detection and SOS alerts.
- Promote a healthy lifestyle by encouraging activity and better habits.
- Enhance patient safety through early warnings and timely interventions.

### **Demerits of Wearable Devices**

- Risk of privacy and data security breaches.
- Possibility of inaccurate readings affecting decisions.
- False alarms may cause confusion or panic.
- Overdependence may delay seeking medical care.
- High cost limits accessibility.
- Technical issues like battery and connectivity problems.
- Continuous monitoring may increase health anxiety.

### **Legal Issues in Wearable Technologies**

Legal issues involve concerns related to the collection, storage, and use of personal health data.

#### **Key Legal Aspects**

- **Data Privacy Laws:** Protection of sensitive health information is mandatory.
- **Data Security & Breach Liability:** Organizations are responsible for safeguarding data and managing breaches.
- **Informed Consent:** Users must be informed about how their data is collected and used.
- **Medical Device Regulation:** Devices must meet regulatory standards for clinical use.
- **Professional Liability:** Healthcare providers must validate device data before clinical decisions.

### **Ethical Issues in Wearable Technologies**

- Ensure confidentiality by protecting patient data.
- Respect patient autonomy in choosing device usage.
- Maintain accuracy and reliability for safe care.
- Address equity issues due to high costs.
- Prevent privacy intrusion from continuous monitoring.

### **Safety Measures While Using Wearable Technologies**

- Use strong passwords and enable two-factor authentication.
- Update software regularly for security.

- Review and manage privacy settings.
- Use secure internet connections; avoid public Wi-Fi.

### **Conclusion**

Digital and wearable technologies have revolutionized healthcare by enhancing monitoring and emergency response. However, ethical and legal considerations must be addressed to ensure patient safety, data security, and equitable access. Proper use and awareness can help maximize benefits while minimizing risks.

### **Author Biography**

**Dr. Kripa Angelin A** is a Professor and Nursing Superintendent at Mahatma Gandhi Medical College and Research Institute, with over 23 years of experience in nursing education, administration, and clinical practice. She holds a Ph.D. in Nursing from Annamalai University and an MBA in Hospital Administration from Alagappa University.

She has expertise in quality assurance, NABH accreditation, and patient safety, with specialization in critical care leadership, infection control, and nursing service management. She has published over 56 research articles, undertaken funded projects, and contributed to Ph.D. guidance and research committees. She also holds patents, copyrights, and serves on editorial boards.

She is a recipient of several recognitions, including the Best Faculty Award and Lean Six Sigma Yellow Belt Certification, and continues to contribute to advancing nursing practice through leadership and innovation.

**Session - 2**

**UNDERSTANDING THE CHALLENGES  
IN RURAL AND REMOTE HEALTH CARE**

**Jai Ganesh E**

Department of Medical Surgical Nursing,  
Sri Manakula Vinayagar Nursing College, Puducherry

**Abstract**

Rural and remote healthcare focuses on delivering services to geographically isolated populations with limited resources. These areas face challenges such as geographic barriers, workforce shortages, poor infrastructure, and limited access to specialized care. Delays in emergency services, financial constraints, and policy gaps further restrict healthcare access. A high burden of maternal, communicable, non-communicable, and mental health issues persists. Technological barriers and environmental factors also affect service delivery. Nurses play a vital role in care, education, and emergency response. Innovations like telemedicine and remote monitoring can improve access, but integrated strategies and policy support are essential for achieving equitable healthcare.

**Overview of the Content**

Rural and remote healthcare refers to the delivery of health services to populations living in geographically isolated areas with limited access to medical facilities, healthcare professionals, and essential resources. Globally, nearly half of the population resides in rural areas; however, these communities often experience significant disparities in health outcomes compared to urban populations.

**Rural and Remote Areas**

Rural areas have low population density, limited infrastructure, and rely mainly on agriculture or primary industries. Remote areas are geographically isolated, often with difficult terrain and poor transportation. Both lack advanced healthcare facilities and specialized services. Rural healthcare aims to improve health outcomes through better care delivery, technology integration, and strategic interventions for underserved populations.

**Demographic Characteristics of Rural Populations**

Rural populations are characterized by low population density, labor-based occupations, limited educational opportunities, poor transportation systems, inadequate communication networks, and lower socioeconomic status.

## **Major Challenges in Rural and Remote Healthcare**

Rural healthcare faces multiple challenges, including geographic barriers that delay access to care, shortages of healthcare professionals affecting service quality, and inadequate infrastructure limiting treatment. Limited access to specialists delays diagnosis, while poor emergency services hinder timely interventions. Financial constraints and gaps in insurance awareness further restrict healthcare access.

## **Health Challenges in Rural Areas**

Maternal and child health issues, including limited antenatal care and malnutrition, contribute to higher mortality rates. Poor sanitation increases the spread of communicable diseases such as TB, malaria, and dengue. Non-communicable diseases like diabetes and hypertension often remain undetected due to lack of screening, while limited mental health services result in untreated conditions such as depression and substance abuse.

## **Technological and Environmental Challenges**

- **Technological Barriers:** Poor connectivity and low digital literacy hinder telemedicine.
- **Environmental Challenges:** Disasters and climate conditions disrupt services and increase disease burden.
- **Supply Chain Issues:** Shortages of medicines and equipment affect care continuity.
- **Professional Isolation & Burnout:** Limited support and heavy workload impact healthcare workers.

## **Role of Nurses in Rural Healthcare**

Nurses play a vital role as primary care providers, emergency responders, health educators, and telehealth facilitators. They often function independently in the absence of physicians.

## **Technological Solutions in Rural Healthcare**

- **Remote Patient Monitoring:** Tracks vital signs to prevent complications.
- **Emergency Alert Systems:** SOS, fall detection, and GPS enable quick response.
- **Telemedicine:** Connects patients with specialists, reducing delays.
- **GPS & Ambulance Tracking:** Improves emergency response time.
- **Drone Technology:** Delivers medicines and supplies to remote areas.

## **Government Initiatives**

- **Ayushman Arogya Mandir & Health and Wellness Centres:** Provide primary care, maternal services, disease management, mental health care, and diagnostics at the community level.
- **Digital Health & Telemedicine:** Initiatives like e-Sanjeevani and ABDM enable teleconsultation, digital health records, and health IDs, improving access to care.

## **Strategies to Improve Rural Healthcare**

- **Strengthening primary healthcare systems**

- Providing incentives for rural healthcare professionals
- Improving infrastructure and transportation
- Expanding telemedicine services

### **Role of Nurses in Digital Emergency Management**

Nurses play a key role in monitoring patient data, educating patients, responding to alerts, coordinating referrals, and ensuring ethical use of digital technologies.

### **Conclusion**

Rural healthcare faces challenges such as geographic barriers, workforce shortages, and poor infrastructure. Addressing these requires integrated efforts through policy support, technology adoption, and community involvement to ensure accessible, affordable, and quality healthcare for all.

### **Author Biography**

**Mr. Jai Ganesh E** is an Assistant Professor in the Department of Medical Surgical Nursing (Critical Care Nursing) at Sri Manakula Vinayagar Nursing College. He holds an M.Sc. Nursing in Critical Care and has over 9 years of teaching experience along with 2 years of clinical experience. He has also completed additional certifications, including courses in scientific writing under ICMR.

He has published research articles in international peer-reviewed journals and serves as a research guide for undergraduate and postgraduate students. As a resource speaker, he has delivered sessions on BCLS, AI in diabetic care, OSCE/OSPE, and emerging trends in nursing. His areas of expertise include CPR training, IV therapy, and infection control, and he actively contributes as an external examiner and university paper evaluator.

**Session - 3**

**AI-ENABLED REMOTE PATIENT MONITORING IN  
CARDIAC EMERGENCIES CARE BEYOND BORDERS  
THROUGH DIGITAL AND WEARABLE TECHNOLOGIES**

**Ashida T.S**

Senior Consultant Interventional Cardiologist,  
Sri Manakula Vinayagar Medical College and Hospital

**Abstract**

Cardiovascular disease is a major cause of mortality in India, with current care largely reactive and focused on treating advanced conditions. This paper highlights the need for a shift toward proactive cardiology using Remote Patient Monitoring integrated with Artificial Intelligence in Healthcare. AI-enabled RPM allows continuous monitoring, early detection of abnormalities, and timely intervention. It reduces hospitalizations, improves patient outcomes, and enhances healthcare efficiency. Overall, AI-RPM represents a promising approach to transform cardiac care, though challenges such as implementation and data security must be addressed.

**Overview of the Content**

Cardiovascular disease represents a silent epidemic in India, with increasing prevalence among younger populations. Despite advances in medical science, the current healthcare system predominantly addresses cardiac conditions only after major events such as myocardial infarction or heart failure exacerbation. This reactive approach results in delayed diagnosis, increased healthcare costs, and avoidable mortality. There is a critical need to shift toward a proactive cardiology model that emphasizes early detection, continuous monitoring, and timely intervention.

**Burden of Cardiovascular Disease in India**

Cardiovascular diseases account for 28% of all deaths, with nearly 25% of heart attacks occurring in individuals below 40 years of age. The high cost of cardiac care leads to significant out-of-pocket expenditure, and premature deaths are projected to cause an economic loss of \$237 billion by 2030. This rising burden highlights the urgent need for innovative and scalable healthcare solutions.

**Limitations of Traditional Cardiac Care**

The existing cardiac care model has several limitations, including heavy reliance on emergency interventions, symptom-based diagnosis that leads to late detection, and missed early warning signs. These issues increase healthcare costs due to emergency procedures and prolonged hospital stays. Consequently, patients experience frequent hospital admissions, require costly interventions

such as stenting and bypass surgery, and often need long-term management of chronic cardiac conditions.

### **Need for Proactive Cardiology**

A paradigm shift is required from reactive to proactive care: The reactive model focuses on treating disease after major events, often resulting in higher costs, poorer outcomes, and limited ability to prevent disease progression. In contrast, the proactive model emphasizes early prediction and management of disease, enabling timely interventions that improve outcomes while reducing overall healthcare costs.

### **Remote Patient Monitoring (RPM)**

#### **Definition**

Remote Patient Monitoring is a healthcare approach where patient data is continuously monitored outside hospital settings using digital technologies.

#### **Components**

- Wearable monitoring devices
- Connectivity and communication networks
- Patient mobile applications
- Clinical dashboards for providers
- Data analytics and decision support systems
- Integration with electronic health records (EHR)

#### **Purpose**

RPM enables real-time tracking of vital parameters, allowing clinicians to make timely and informed decisions without requiring physical hospital visits.

#### **AI-Enabled Remote Patient Monitoring**

AI enhances RPM by converting raw health data into actionable clinical insights. Wearable technology enables continuous capture of high-resolution physiological data during daily activities, which is analyzed using AI algorithms to detect subtle abnormalities such as changes in heart rhythm, variations in respiratory rate, and early signs of cardiac deterioration. This integration provides early alerts to clinicians, helps prevent acute cardiac emergencies, and enhances overall patient safety, demonstrating the significant clinical value of AI-enabled remote patient monitoring (AI-RPM).

#### **Reduction in Emergency Hospitalizations**

- Early detection of subclinical changes
- Timely nurse-led interventions

- Prevention of acute cardiac events
- Significant reduction in healthcare costs

### **Optimization of Hospital Stay**

- Real-time monitoring supports early discharge decisions
- Reduction in average hospital stay duration
- Improved patient flow and resource utilization

### **Post-Discharge Monitoring**

- Continuous tracking during the high-risk transition period
- Early detection of complications
- Reduction in readmissions (up to 30% of initial cost avoided)

### **Role in Heart Failure Management**

AI-enabled remote patient monitoring (AI-RPM) plays a vital role in heart failure management by enabling early detection of pulmonary congestion through continuous data analysis. Real-time alerts are generated when abnormalities are identified, allowing nurses to initiate timely interventions and prevent clinical deterioration. This proactive approach significantly reduces the need for hospitalization and improves patient outcomes. Furthermore, advanced technologies such as implantable monitoring devices provide precise pressure measurements, supporting accurate and effective clinical management of heart failure patients.

### **Role in Acute Coronary Syndromes and Arrhythmias**

Remote monitoring supports early detection of arrhythmias, continuous ECG monitoring through wearable devices, timely clinical interventions, and improved management of acute coronary syndromes (ACS). From a workforce and economic perspective, nearly 60% of hospital budgets are spent on labor, and AI helps optimize this by automating routine monitoring tasks, enabling the scaling of healthcare services without increasing workforce burden, and reducing burnout among healthcare providers. Additionally, nurse-centric workflows are strengthened through real-time alerts, data-driven decision-making, and efficient prioritization of high-risk patients.

### **Integration into Clinical Practice**

Successful implementation of AI-enabled remote patient monitoring requires multidisciplinary collaboration, standardized protocols, continuous training, and integration with digital health systems. However, challenges such as rising labor costs, resistance to technology adoption, need for staff training, data privacy concerns, and system integration issues must be addressed. Despite these barriers, the approach offers significant patient-centered benefits, including reduced hospital visits, lower financial burden, improved quality of life, decreased travel and fatigue, and better continuity of care. Looking ahead, future advancements focus on predictive AI for early risk

detection, expansion to underserved areas, improved wearable technologies, and scalable global models for remote cardiac care.

### **Conclusion**

AI-enabled Remote Patient Monitoring is revolutionizing cardiac care by shifting the paradigm from reactive treatment to proactive prevention. It enables early detection, reduces hospitalizations, lowers healthcare costs, and improves patient outcomes. With sufficient evidence supporting its role in heart failure, acute coronary syndromes, and arrhythmia management, AI-RPM represents the future of cardiology.

Healthcare professionals play a critical role in adopting and implementing these technologies to ensure a sustainable and effective healthcare system.

### **Call to Action**

The future of cardiac care is already here. By embracing AI-enabled RPM, we can move beyond traditional limitations, deliver care without borders, and save lives before emergencies occur.

### **Author Biography**

**Dr. Ashida T.S** is a Professor and Head of the Department of Cardiology at Sri Manakula Vinayagar Medical College and Hospital, Puducherry, and has been serving as an interventional cardiologist since 2014. She completed her M.B.B.S. from JIPMER, Puducherry, followed by an M.D. in General Medicine and a super-specialty degree in Cardiology from the National Board (Southern Railway Hospital, Chennai). A recipient of several academic distinctions, including university honors and gold medals, she was awarded the Dr. H.S. Wasir Gold Medal in Cardiology. Dr. Ashida T.S is a Fellow of the European Society of Cardiology and the Society of Cardiovascular Angiography and Interventions. She has published more than 14 articles in reputed indexed journals, contributed to book chapters, and is actively engaged in research focusing on thrombolytic therapy and post-ICU cardiac care. She is a member of several professional bodies, including the Cardiological Society of India and the Indian Association of Echocardiography.

## Session - 4

# REAL-TIME REMOTE MONITORING AND ALARMING SYSTEM OF OBSTETRICAL EMERGENCIES

**S. Vijayalakshmi**

Vignesh Nursing College, Tiruvannamalai

### Abstract

Maternal mortality remains a major global health concern, particularly in developing countries. Timely identification of obstetrical emergencies is critical to preventing maternal and fetal deaths. Real-time remote monitoring and alarming systems enable continuous observation of maternal and fetal parameters, allowing early detection of complications and prompt intervention. This paper discusses the need, working principles, clinical applications, advantages, and challenges of implementing such systems in obstetrical care, especially in rural and resource-limited settings.

### Overview of the Content

Pregnancy and childbirth are natural processes but may involve risks that can lead to life-threatening emergencies. Early detection of complications is essential to prevent maternal and fetal mortality. Real-time monitoring technologies help healthcare professionals identify abnormalities quickly, ensuring timely and effective care. Remote monitoring is particularly beneficial in rural and underserved areas where access to specialists is limited.

### Need for Remote Monitoring and Alarming System

High maternal mortality in developing countries is driven by delayed identification of obstetrical emergencies, shortage of specialists in rural areas, and the need for continuous maternal monitoring and rapid emergency alert systems.

### Global Scenario

Approximately 295,000 maternal deaths occur annually worldwide, with major causes including hemorrhage (27%), hypertensive disorders (14%), sepsis (11%), unsafe abortion (8%), and obstructed labor (6%).

### Concept of Monitoring

- **Real-Time Monitoring:** Continuous recording and immediate transmission of physiological data
- **Remote Monitoring:** Observation of patients from distant locations using digital systems
- **Alarm System:** Generates alerts when parameters exceed safe limits

### Three Delay Model & Obstetrical Emergencies

The Three Delay Model includes delays in seeking care, reaching a facility, and receiving treatment. Real-time monitoring helps reduce delays in diagnosis, referral, and intervention,

improving maternal outcomes, especially in obstetrical emergencies like hemorrhage, eclampsia, fetal distress, and sepsis.

### **Parameters Monitored**

Effective maternal and fetal monitoring involves tracking key physiological parameters. Maternal parameters include blood pressure, pulse rate, oxygen saturation, temperature, and blood glucose levels. Fetal monitoring focuses on fetal heart rate, uterine contractions, and fetal movements, which are essential for assessing fetal well-being and detecting early signs of distress.

### **Data System & Alarm Levels**

Health data is transmitted through technologies such as GSM, Wi-Fi, Bluetooth, and 4G/5G networks to a centralized monitoring system comprising servers, cloud storage, dashboards, and alert management systems. Based on the severity of clinical conditions, alerts are categorized into three levels: Level 1 (warning), Level 2 (urgent), and Level 3 (emergency), enabling timely and appropriate clinical interventions.

### **Clinical Parameters and Threshold Values**

Maternal vital signs guide timely care, with normal BP (110/70–120/80), pulse (60–100 bpm), temperature (36.5–37.5°C), and SpO<sub>2</sub> (95–100%), while elevated or reduced values indicate warning or emergency levels. Fetal well-being is assessed by heart rate (110–160 bpm), regular movements, and normal uterine contractions, with abnormalities signalling potential risk.

### **Working Principle**

The system works by detecting abnormal physiological values through sensors, transmitting data to a central server, and analyzing it using software. When critical changes are identified, an alert is generated, prompting the nurse to assess the patient, inform the doctor, and initiate appropriate emergency care.

### **Detection of Obstetrical Emergencies**

Obstetrical emergencies can be detected early using key clinical indicators. Pre-eclampsia presents with high blood pressure (>140/90), edema, headache, and proteinuria, while postpartum hemorrhage shows rapid pulse, low BP, pallor, and shock. Fetal distress is identified by abnormal heart rate (<110 or >160 bpm), and sepsis by fever, tachycardia, and hypotension, all requiring immediate attention.

### **Role of Nurse**

Nurses play a vital role in managing obstetrical emergencies by continuously monitoring maternal and fetal conditions, operating monitoring devices, and accurately recording and analyzing data. They respond promptly to alarms, educate patients and families, and provide immediate emergency care, ensuring timely interventions and improved outcomes.

### **Advantages and Limitations**

The system enables early detection, continuous monitoring, reduced maternal mortality, improved fetal outcomes, fewer hospital visits, and efficient resource use, especially in rural areas. However, it is limited by high costs, need for reliable internet, technical issues, trained personnel requirements, and power supply challenges.

### **Conclusion**

Real-time remote monitoring and alert systems shift maternal healthcare from a reactive to a proactive approach by enabling early detection and timely intervention. This leads to improved maternal and fetal outcomes, highlighting the importance of investing in such technologies to reduce maternal mortality and strengthen healthcare systems.

### **Author Biography**

**Dr. S. Vijayalakshmi** is an experienced nursing academician and administrator with over two decades of teaching and leadership experience. She holds a Ph.D. in Nursing along with postgraduate and undergraduate degrees in nursing, and additional qualifications in sociology and emergency cardiac care. She has served in key academic roles including Principal and Head of Department in reputed nursing institutions.

Dr. Vijayalakshmi has contributed extensively to nursing education, having guided numerous postgraduate and doctoral scholars. She has organized conferences, delivered lectures at national and international forums, and published research articles and books. Her leadership roles include positions in professional nursing bodies and academic councils. She has received several awards for excellence in nursing education and research and continues to contribute to advancing nursing practice, education, and healthcare delivery.

**Session – 5**

**ARTIFICIAL INTELLIGENCE ENHANCED  
MONITORING SYSTEM IN PSYCHIATRIC EMERGENCIES**

**N. Balasubramanian**

Malla Reddy College of Nursing, Hyderabad

**Abstract**

Psychiatric emergencies such as suicidal behavior, acute psychosis, aggression, and substance intoxication require rapid detection and intervention, but traditional methods may delay recognition. AI-enhanced monitoring enables continuous real-time analysis of behavior and physiological data, helping detect early warning signs like suicidal ideation, agitation, and abnormal vitals. Technologies such as risk prediction algorithms, computer vision, speech analysis, and wearable sensors generate timely alerts, supporting prompt clinical decisions, improving patient safety, and reducing workload. However, challenges like data privacy, technical limitations, and the need for training remain, though overall AI offers a proactive approach to managing psychiatric emergencies.

**Overview of the Content**

**Psychiatric Emergencies**

Psychiatric emergencies include conditions such as suicidal attempts, acute psychosis, violent behavior, severe agitation, delirium, and substance intoxication. These situations require rapid assessment and continuous monitoring to prevent harm and ensure timely intervention.

**AI-Enhanced Monitoring**

Artificial Intelligence (AI) enhances psychiatric emergency care by analyzing real-time patient data, recognizing behavioral patterns, and generating alerts for early intervention. This enables healthcare professionals to act promptly and prevent life-threatening outcomes.

**AI Technologies – Risk Prediction**

AI-based risk prediction algorithms help identify patients at risk of suicide, escalating aggression, and delirium. These systems are widely used in emergency departments, intensive care units, psychiatric wards, and telemedicine platforms to support early clinical decision-making.

**Computer Vision Monitoring**

Computer vision technology detects self-harm behaviors, aggressive movements, restlessness, falls, and seizures. This reduces the need for constant physical restraints and enhances patient safety.

### **Speech and Voice Analysis**

AI-based speech analysis identifies patterns such as rapid or pressured speech, verbal threats, suicidal expressions, and disorganized communication. This is particularly useful in detecting acute psychosis and manic episodes.

### **Wearable and Sensor-Based Monitoring**

Wearable devices monitor physiological parameters such as heart rate, oxygen saturation, and motor activity. These systems help detect panic attacks, withdrawal symptoms, and other physiological changes associated with psychiatric emergencies.

### **AI in Suicidal Crisis**

AI systems detect early warning signs of suicidal behavior, including hopeless language, social withdrawal, sleep disturbances, and behavioral changes. Immediate alerts are generated to enable timely intervention by healthcare providers.

### **AI in Acute Psychosis**

AI monitors behavioral indicators such as hallucinations, talking to self, abnormal eye movements, and emotional distress. It also identifies motor agitation and speech abnormalities, helping clinicians detect and manage acute psychosis effectively.

### **Violent and Aggressive Behavior**

AI predicts escalation of violent behavior by analyzing voice tone, speech patterns, physiological markers, facial expressions, and environmental triggers. Early detection allows preventive interventions and ensures safety.

### **Substance Intoxication and Withdrawal**

AI systems identify signs of substance intoxication and withdrawal, including tremors, sweating, confusion, agitation, slurred speech, and poor coordination. These indicators help in early diagnosis and management.

### **Role of Nurse**

Nurses play a crucial role in validating AI-generated alerts, providing immediate therapeutic interventions, ensuring patient safety and dignity, making clinical decisions, and coordinating multidisciplinary care. AI supports but does not replace clinical judgment.

### **Advantages**

AI-assisted monitoring provides faster risk detection, continuous 24/7 monitoring, improved patient and staff safety, reduced workload, and cost-effective care delivery.

### **Ethical and Legal Considerations**

Key concerns include obtaining informed consent, ensuring data privacy and confidentiality, preventing excessive surveillance, and maintaining accountability for AI-based decisions.

### **Challenges**

Challenges include false alarms, technical failures, limited resources, need for training, and cultural sensitivity in interpreting AI-generated data.

### **Future Directions**

Future developments include AI-guided crisis intervention protocols, smart emergency rooms, advanced monitoring dashboards, and integration with ambulance and emergency response systems.

### **Conclusion**

AI-enhanced monitoring significantly improves early detection, risk prediction, emergency response, patient safety, and clinical outcomes in psychiatric emergencies, shifting care from reactive to proactive management.

### **Author Biography**

**Dr. N. Balasubramanian** is a distinguished nursing academician with over 24 years of experience in teaching, research, and administration. He holds a Ph.D. in Psychiatric Nursing from Yenepoya University and an M.Phil. (Gold Medalist) from Vinayaka Missions University. He has served in key leadership roles as Principal and Director in reputed nursing institutions across India and is currently working as Dean cum Principal at Malla Reddy College of Nursing, Hyderabad.

He has published over 50 research articles in indexed journals and has successfully guided Ph.D. scholars. He is the recipient of the INSC Research Excellence Award (2022) and actively contributes to academia as a conference organizer, editorial board member, peer reviewer, and Ph.D. evaluator for reputed universities.

**Session - 6**

**ENHANCING EMERGENCY RESPONSE IN RURAL SETTINGS WITH IOT IN PEDIATRIC EMERGENCIES**

**P. Shanmugavadivu**

Child Health Nursing, Narayana College of Nursing, Nellore

**Abstract**

Pediatric emergencies require rapid recognition and timely intervention to reduce morbidity and mortality. In rural areas, delays due to limited resources, poor infrastructure, and shortage of specialists adversely affect outcomes. The Internet of Things (IoT) offers a promising solution through wearable devices and real-time data transmission, enabling continuous monitoring and early detection of clinical deterioration. IoT supports teleconsultation, smart ambulance systems, and predictive analytics, improving emergency response and coordination. Although challenges such as connectivity, cost, and training exist, effective implementation can enhance access to care, reduce delays, and improve outcomes, ensuring equitable pediatric emergency care in rural settings.

**Overview of the Content**

Pediatric emergencies are highly time-sensitive, where outcomes depend on rapid recognition and immediate intervention. In rural India, factors such as geographic isolation, inadequate infrastructure, and shortage of pediatric specialists contribute to delays in accessing timely care. The Internet of Things (IOT), which involves interconnected devices capable of collecting and transmitting real-time data, has the potential to transform emergency response systems by bridging the rural-urban healthcare gap.

**Challenges in Rural Pediatric Emergency Care**

Rural healthcare systems face significant challenges affecting pediatric emergency outcomes, including long travel distances to tertiary centers, lack of advanced equipment and pediatric specialists in PHCs, and communication barriers for specialist consultation. These factors lead to delayed treatment and higher rates of preventable complications and mortality among rural children.

**Global Perspectives on IOT in Pediatric Emergencies**

Globally, developed countries have adopted IoT-enabled pediatric intensive care units with continuous monitoring and predictive analytics. In developing countries, pilot projects show that low-cost wearable devices are feasible for child health monitoring. However, implementation must be adapted to local contexts, as solutions from high-resource settings may need modification for rural and resource-limited areas.

### **Role of IoT in Emergency Response**

IoT enhances emergency response through remote monitoring of vital signs via wearable sensors, smart ambulances that transmit real-time patient data to hospitals, and teleconsultation connecting rural providers with specialists. Additionally, AI-driven predictive analytics helps identify early signs of clinical deterioration, enabling timely intervention.

### **IoT Applications in Pediatric Emergencies (Case Example)**

In a rural setting, IoT-enabled devices can monitor a child with a severe asthma attack, detect worsening vital signs, and send alerts to nearby facilities. An ambulance is dispatched with continued real-time monitoring, while a pediatrician guides the nurse via teleconsultation, enabling early stabilization and effective emergency care.

### **Infrastructure Requirements**

Successful implementation of IoT systems requires strong infrastructure, including reliable internet or mobile connectivity for data transmission. In rural areas, power issues can be addressed using solar or battery-backed devices, while cloud-based systems enable secure data storage and real-time analysis for timely clinical decisions.

### **Policy and Governance Framework**

IoT integration in healthcare requires strong policy support, inclusion in national programs, and public-private partnerships for affordability. Regulatory frameworks must ensure safety, data security, and interoperability, while effective implementation depends on provider training, community engagement, and simulation-based preparedness.

### **Research and Evidence Generation**

Further research is needed to evaluate the effectiveness of IoT in reducing pediatric morbidity and mortality. Clinical trials and cost-effectiveness studies will help determine sustainability in resource-limited settings. Establishing national data repositories can support large-scale analysis and policy decisions.

### **Sustainability and Scalability**

For long-term success, IoT solutions must be affordable and scalable. Low-cost devices designed specifically for rural settings are essential. Maintenance models should include training local technicians. Pilot projects can be expanded to district and state levels to achieve wider impact.

### **Integration with Emergency Services**

IoT integration with emergency services improves response by enabling real-time data transmission from ambulances, helping hospitals prepare in advance. However, challenges like poor connectivity, training needs, costs, and data security must be addressed. Future efforts should

focus on national integration, affordable devices, community training, and research to build a connected system for timely pediatric care.

### **Conclusion**

IoT is essential for reducing disparities in pediatric healthcare by enabling rapid detection, timely intervention, and improved outcomes in emergencies. With strong infrastructure, proper implementation, and policy support, it can significantly enhance pediatric emergency care in rural areas and ensure equitable access for all children.

### **Author Biography**

**Mrs. P. Shanmugavadivu** is a dedicated nursing academician with over 18 years of experience in clinical practice, teaching, and research. She completed her B.Sc. Nursing from Adhiparasakthi College of Nursing, Tamil Nadu, and M.Sc. Nursing from Saveetha College of Nursing, Chennai, and is currently pursuing her Ph.D. at Saveetha University. She began her career as a Staff Nurse at Adhiparasakthi Hospital and has held various academic positions, including Lecturer, Assistant Lecturer, and Professor cum Head of the Department of Child Health Nursing in reputed institutions across India. She also has international experience as a Dialysis Nurse in Kuwait. She has guided over 50 undergraduate and 10 postgraduate students and serves as a Ph.D. guide under Dr. NTR University of Health Sciences. She has published research articles in Scopus and Web of Science indexed journals and has completed certification courses in research methods and biostatistics. Additionally, she holds OET/IELTS qualifications and is a registered member of the Andhra Pradesh Nursing and Midwives Council, as well as a life member of the Trained Nurses Association of India (TNAI) and the Nurses Teacher Association.

**Session - 7**

**DATA PRIVACY, CYBERSECURITY AND PATIENT SAFETY**

**P. Raman**

HBCH & MPMCC, Varanasi

**Abstract**

The rapid digital transformation of healthcare through electronic health records (EHRs), telemedicine, wearable devices, and health information systems has significantly improved care delivery and efficiency. However, this advancement has increased vulnerabilities related to data privacy, cybersecurity, and patient safety. Patient data has become a valuable digital asset, making healthcare systems prime targets for cyberattacks. Ensuring data protection is not only a technical necessity but also an ethical obligation essential for maintaining patient trust and safety.

**Overview of the Content**

Digital healthcare technologies such as EHRs, telemedicine, and wearable devices have improved access, continuity, and efficiency of care, but also increased risks of unauthorized access and cyber threats. Protecting patient information is essential for safety and trust. Data privacy ensures the confidentiality, integrity, and availability of patient data, while Personal Health Information (PHI) includes identifiable and clinical details like diagnosis and treatment records. Cybersecurity focuses on protecting healthcare systems and devices from threats such as hacking, ransomware, phishing, and data breaches.

**Types of Patient Data**

Patient data encompasses multiple categories, including personal identification information (PII), medical history and clinical records, genetic information, financial and insurance details, and behavioral and mental health data. Each type carries distinct risks and therefore requires specific protection strategies to ensure privacy and security.

**Importance of Data Privacy and Cybersecurity**

Cyber threats pose significant risks to healthcare systems by compromising patient privacy, disrupting services, and increasing financial burden. Data breaches can lead to identity theft, fraud, loss of trust, legal issues, and threats to patient safety, making strong data security essential for accurate care and continuity.

**Global and Indian Scenario**

Globally, over 276 million healthcare records were exposed in 2024, with 387 major breaches reported in the United States early in the year. In India, the healthcare sector faced about 21.8% of

cyberattacks, with nearly 7,000 attacks per week in hospitals, highlighting the increasing vulnerability of healthcare systems.

### **Cybersecurity Threats in Healthcare**

Common cybersecurity threats in healthcare include ransomware and phishing attacks, insider threats, data breaches, vulnerabilities in medical devices, outdated legacy systems, and lack of cybersecurity expertise. These risks can disrupt healthcare delivery and directly compromise patient safety.

### **Impact on Patient Safety**

Cyberattacks can significantly impact patient safety by delaying treatment, disrupting diagnostic services, and compromising medical devices; for example, ransomware attacks may shut down hospital systems, forcing manual operations and increasing the risk of errors. Additionally, connected medical devices such as infusion pumps, pacemakers, and ventilators are vulnerable due to weak passwords, outdated software, and unsecured networks, and their compromise can result in incorrect treatments and life-threatening situations.

### **Strategies for Enhancing Data Protection**

Data security is ensured through encryption methods such as AES and TLS for safe data transmission and storage. Access control measures, including role-based access, biometric authentication, and multi-factor authentication, prevent unauthorized access. Additionally, regular security audits are conducted to identify and address potential vulnerabilities.

### **Technologies for Secure Data Handling**

- Blockchain for secure and tamper-proof records
- AI and Machine Learning for threat detection
- Cloud security solutions for safe data storage

### **Cybersecurity Strategy and Planning**

Healthcare organizations must implement comprehensive cybersecurity strategies including risk assessment, incident response planning, and regulatory compliance.

### **Training and Awareness**

Staff training in cybersecurity practices such as phishing awareness, password management, and incident reporting is essential to prevent breaches.

### **Incident Response Plan**

An effective response to cyber threats involves identifying and isolating the threat, informing relevant authorities, containing the damage, restoring affected systems, and reviewing measures to strengthen security.

## **Cybersecurity Lifecycle**

Cybersecurity management follows four key steps: protect to prevent breaches, detect to identify threats, respond to take immediate action, and recover to restore systems and strengthen defenses.

## **Future Trends**

Emerging trends include AI-driven security systems, advanced encryption techniques, and integration of cybersecurity into healthcare policies and infrastructure.

## **Conclusion**

In the digital era, data privacy and cybersecurity are vital for safe and ethical healthcare delivery. Protecting patient information ensures trust, continuity of care, and better clinical outcomes, with healthcare professionals—especially nurses—playing a key role in maintaining data security and patient safety.

## **Author Biography**

**Mr. P. Raman** is a dedicated nursing professional with expertise in mental health nursing, hospital administration, and patient safety. He completed his B.Sc. and M.Sc. Nursing (Gold Medalist) from Sri Manakula Vinayagar Nursing College, Puducherry, and holds an MBA in Hospital Administration from Alagappa University, Tamil Nadu. He has diverse clinical and academic experience, having served as a Staff Nurse, Lecturer, and currently as Assistant Nursing Superintendent at HBCH & MPMMCC, Tata Memorial Centre, Uttar Pradesh. His experience also includes roles in the National Health Mission and ICMR research projects.

Mr. Raman is an active contributor to research and academic activities, with more than 10 publications in national and international journals. He has presented papers at various conferences and has served as a syllabus expert at IIT and panel member in selection committees. He has also coordinated fellowship and postgraduate diploma programs and organized multiple academic events. His areas of interest include data privacy, cybersecurity, and patient safety in healthcare.

## **Session - 8**

### **NURSING LEADERSHIP IN DIGITAL HEALTH TRANSFORMATION**

**Pritha L.**

Sri Sathya Sai Institute of Higher Medical Sciences College of Nursing, Bengaluru

#### **Abstract**

Digital health transformation is reshaping healthcare delivery through the integration of technologies such as telehealth, electronic health records, wearable devices, and predictive analytics. Nurse leaders play a critical role in ensuring effective adoption, implementation, and optimization of these technologies. Their leadership bridges the gap between innovation and clinical practice, improving patient outcomes, enhancing quality of care, and ensuring patient safety. This paper highlights the roles, responsibilities, and impact of nursing leadership in digital health transformation, with emphasis on emergency care and community-based applications.

#### **Overview of the Content**

Digital transformation in healthcare involves the integration of advanced technologies into all aspects of care delivery, fundamentally changing how healthcare is managed and experienced. With the increasing complexity of healthcare systems, especially in emergency and community settings, nurses play a vital role in adapting and utilizing digital tools to enhance patient care.

#### **Objectives**

- To understand digital health transformation
- To identify leadership roles of nurses
- To explore wearable technologies in emergencies
- To examine community-based applications
- To review research evidence

#### **Digital Health Transformation**

Digital health transformation refers to the integration of digital technologies into healthcare systems, improving efficiency, accessibility, and patient outcomes. Technologies such as telehealth, mobile health (mHealth), electronic health records (EHR), clinical decision support systems (CDSS), wearable devices, and predictive analytics are key components of this transformation.

#### **Areas of Digital Health in Nursing**

- Telehealth enables remote care, while EHRs store and manage patient data.
- CDSS supports clinical decisions, and mHealth with wearables helps monitor health.
- Predictive analytics identifies risks early and improves patient outcomes.

## **Importance of Nursing Leadership**

Healthcare is rapidly shifting toward digital ecosystems where real-time responses are essential, particularly in emergencies. Nurses are frontline healthcare providers, and nurse leaders play a crucial role in bridging the gap between technology developers and clinical practice. They ensure that digital tools are effectively implemented to improve patient outcomes and enhance quality of care.

## **Global Nursing and Digital Landscape**

There are approximately 27.9 million nurses globally, with a shortage of about 5.9 million. Nearly 70% of healthcare data is digitized, and telehealth utilization has increased significantly post-COVID-19. The global digital health market is projected to exceed \$900 billion by 2030, reflecting rapid technological growth and investment.

## **Key Roles of Nurse Leaders**

Nurse leaders act as change agents by driving adoption of new technologies and reducing resistance among staff. They serve as clinical informatics experts, aligning digital systems with workflows, and as policy advocates supporting health IT initiatives. They also function as educators and quality improvement leaders, building digital skills and using data to enhance patient outcomes.

## **Change Management and Implementation**

Nurse leaders play a vital role in guiding healthcare teams through digital transformation. They manage change, address resistance, and ensure continuous improvement. Leadership commitment is essential for successful integration of digital technologies into clinical workflows.

## **Clinical Decision Support and Data-Driven Practice**

Nurse leaders oversee the use of digital tools such as EHRs, dashboards, and AI systems to support clinical decision-making. Effective use of data improves early detection of complications, enhances patient safety, and reduces clinical errors.

## **Education, Training, and Digital Literacy**

Nurse leaders identify training needs and ensure staff are equipped with digital competencies. They promote digital literacy among patients and healthcare providers, enabling effective use of digital tools in clinical practice.

## **Quality Improvement and System Optimization**

Digital systems such as telehealth and remote patient monitoring (RPM) provide valuable data for improving care quality. Nurse leaders use this data to refine clinical protocols, reduce hospital readmissions, and enhance chronic disease management.

### **Patient Advocacy and Engagement**

Nurse leaders promote patient-centered care by encouraging the safe use of digital technologies. They educate patients, address barriers to access, and ensure equitable healthcare delivery.

### **Ethics, Policy, and Governance**

Ethical considerations include patient privacy, data security, informed consent, and equitable access. Nurse leaders contribute to policy development and ensure ethical use of digital technologies.

### **Community-Based Applications**

Nurse leaders play a key role in implementing digital health solutions in community settings. Wearable devices such as ECG monitors, glucose monitors, BP monitors, and fall detection sensors enable early detection of health issues and reduce hospital admissions.

### **Role in Remote Patient Monitoring (RPM)**

Nurse leaders oversee RPM programs, ensuring effective monitoring, timely interventions, and improved patient outcomes. These systems help reduce emergency visits and unplanned hospital admissions.

### **Leadership Models and Frameworks**

Various leadership models guide nurse leaders in managing digital transformation. These frameworks focus on innovation, collaboration, and evidence-based decision-making.

### **Indian Perspective**

India is rapidly adopting digital health technologies through national initiatives and programs. Nurse leaders play a crucial role in implementing these technologies in both urban and rural healthcare settings.

### **Future Directions**

Future advancements include integration of AI, expansion of telehealth, improved wearable technologies, and enhanced digital health infrastructure. Continuous training and policy support are essential for sustainable growth.

### **Conclusion**

Nursing leadership is central to the success of digital health transformation. Nurse leaders ensure that technology is used effectively to improve patient care, enhance safety, and optimize healthcare delivery. Their role is vital in bridging the gap between innovation and practice.

**“Leadership in nursing is not about managing technology, but about using technology to transform lives.”**

### **Author Biography**

**Dr. Pritha L.** is an experienced nursing academician with over 23 years of professional expertise in clinical practice, teaching, and research. She holds a Ph.D. in Nursing from Saveetha Institute

of Medical and Technical Sciences, an M.Sc. in Medical Surgical Nursing from M.A. Chidambaram College of Nursing, and a B.Sc. Nursing from Sharmila College of Nursing, Tamil Nadu. She has three years of clinical experience as a Senior Staff Nurse at Apollo Specialty Hospital and over two decades of teaching experience. Currently, she serves as Vice-Principal, Professor, and Head of the Department of Medical Surgical Nursing at Sri Sathya Sai Institute of Higher Medical Sciences College of Nursing, Bengaluru.

Dr. Pritha has made significant academic and professional contributions, serving as a Ph.D. examiner, Board of Studies member under RGUHS, and examiner, paper setter, and valuator for reputed universities. She has presented papers at national conferences, organized academic programs, and is a certified BCLS trainer. She has guided undergraduate and postgraduate research projects and actively contributes as a resource person in healthcare education. She has received awards for excellence in clinical nursing and continues to contribute to advancing nursing education and practice.

**Session - 9**

**NURSING INFORMATICS AND  
CLINICAL DECISION SUPPORT SYSTEM**

**Akhilesh Sharma**

G.T.B. Hospital & UCMS, Govt. of NCT of Delhi

**Abstract**

Nursing informatics is an evolving discipline that integrates nursing science with computer and information sciences to enhance patient care and clinical decision-making. With the rapid advancement of healthcare technologies, clinical decision support systems (CDSS) play a crucial role in improving accuracy, efficiency, and quality of care. This paper highlights the meaning, definitions, historical development, and significance of nursing informatics, along with its role in healthcare automation. It also emphasizes the benefits of computerization in reducing documentation burden and improving patient outcomes. Nursing informatics continues to transform healthcare delivery by supporting evidence-based practice and enhancing patient safety.

**Overview of the Content**

The integration of information technology into healthcare has significantly transformed nursing practice. Nursing informatics combines nursing science with computer and information sciences to manage and communicate data, information, and knowledge in nursing practice. It plays a vital role in improving clinical outcomes, enhancing patient safety, and supporting healthcare professionals in decision-making processes. Clinical Decision Support Systems (CDSS) are an important component of nursing informatics, providing evidence-based guidance to healthcare professionals.

**Meaning of Informatics**

The term informatics is derived from the French word “Informa Tique,” which means computer science. Informatics is broadly defined as the integration of computer science and information science, focusing on the collection, processing, and management of data to generate meaningful information for decision-making.

**Definition of Nursing Informatics**

Hebda (1998) defined nursing informatics as the use of computer technology to support nursing functions, including clinical practice, administration, education, and research. The American Nurses Association (1994) further defined nursing informatics as the development and evaluation of applications, tools, processes, and structures that assist nurses in managing data and supporting patient care effectively.

## **History of Nursing Informatics**

The foundation of nursing informatics dates back to Florence Nightingale, who utilized statistical data to improve patient care and healthcare practices. In 1863, she emphasized the importance of collecting, analyzing, and interpreting data to identify patterns in disease and treatment outcomes. During the 1950s and 1960s, significant advancements occurred in healthcare systems, particularly with the introduction of early computing technologies. In the 1970s, nurses played a key role in developing hospital information systems. By the late 1970s and early 1980s, nursing informatics was recognized as the application of computer technology to support nursing practice.

In the 1990s, the widespread use of the internet enabled web-based clinical applications, enhancing communication and access to healthcare information. In 1996, theoretical models were introduced to demonstrate the integration of nursing science, computer science, and information processing, forming the foundation of modern nursing informatics.

## **Skills Required in Nursing Informatics**

Nurses must possess essential informatics competencies, including basic computer literacy, the ability to use healthcare software applications, and skills in managing information and knowledge. These competencies enable nurses to provide efficient, accurate, and evidence-based patient care.

## **Benefits of Computer Automation in Healthcare**

Computer automation has significantly improved healthcare delivery by reducing redundancy in data entry and minimizing time spent on documentation. It enhances efficiency, accuracy, and communication among healthcare providers. Automation allows nurses to dedicate more time to direct patient care, thereby improving patient satisfaction and clinical outcomes.

## **Role of Clinical Decision Support Systems (CDSS)**

Clinical Decision Support Systems are computer-based tools that assist healthcare professionals in making informed clinical decisions. CDSS provides real-time alerts, reminders, and evidence-based recommendations, helping to reduce errors and improve patient safety. These systems support diagnosis, treatment planning, and monitoring of patient conditions.

## **Conclusion**

Nursing informatics is a vital component of modern healthcare systems, enabling the integration of technology into nursing practice. It enhances patient safety, improves efficiency, and supports evidence-based clinical decision-making. With continuous advancements in technology, nursing informatics and CDSS will play an increasingly important role in delivering high-quality healthcare services.

### **Author Biography**

**Dr. Akhilesh Sharma** is a dedicated nursing professional with over 17 years of clinical and academic experience in psychiatric and mental health nursing. He completed his B.Sc. Nursing from Sri Rawatpura Sarkar College of Nursing, M.Sc. Nursing from Padmashree College of Nursing, and Ph.D. in Nursing from RJJT University, Rajasthan. He currently serves as a Nursing Officer at Guru Teg Bahadur Hospital, Delhi, and has held key roles including Nursing Tutor and Vice-Principal. He is also an active research guide for undergraduate and postgraduate students and has served as Editor-in-Chief for international nursing journals.

Dr. Sharma has made significant contributions to research and education, with multiple publications in international journals and experience in organizing health camps and academic activities. He has received several awards, including the Rashtriya Vidya Saraswati Puraskar and Eminent Education Award. Recognized as a COVID Warrior, he has been featured on national media and appreciated by national authorities. His expertise includes psychiatric nursing, stress management, counseling, nursing administration, and academic leadership.

**PAPER PRESENTATION SESSION**

**KNOWLEDGE REGARDING DIGITAL AND  
WEARABLE TECHNOLOGIES IN TRACKING AND  
MANAGING EMERGENCIES AMONG NURSING STUDENTS**

**Jeyagowri**

College of Nursing, East Coast Institute of Medical Sciences

**Abstract**

**Background:** Digital and wearable technologies are increasingly used in healthcare for monitoring patients and managing emergencies. Devices such as smartwatches, wearable ECG monitors, pulse oximeters, and mobile health applications facilitate early detection of patient deterioration and support rapid emergency response. Nursing students must possess adequate knowledge to effectively utilize these technologies in clinical settings.

**Aim:** To assess the knowledge regarding digital and wearable technologies in tracking and managing emergencies among nursing students.

**Methods:** A quantitative descriptive study was conducted among 80 nursing students selected using a non-probability convenience sampling technique. A structured knowledge questionnaire consisting of 30 multiple-choice questions was used for data collection. Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (chi-square test).

**Results:** The findings revealed that the majority of nursing students (62.5%) had moderate knowledge, 22.5% had adequate knowledge, and 15% had inadequate knowledge regarding digital and wearable technologies in emergency management. The mean knowledge score was  $19.2 \pm 4.1$ . A statistically significant association was found between knowledge level and year of study ( $p = 0.007$ ) as well as previous digital health training ( $p = 0.004$ ).

**Conclusion:** Although most nursing students demonstrated moderate knowledge, gaps remain in comprehensive understanding of digital health technologies. Strengthening digital health education within the nursing curriculum is essential to improve emergency preparedness and patient safety.

**Keywords:** Digital Health, Wearable Technologies, Emergency Management, Nursing Students, Knowledge Assessment.

## **Introduction**

Digital health technologies are transforming healthcare delivery worldwide. Wearable devices such as smartwatches, fitness trackers, wearable ECG monitors, and portable monitoring systems enable real-time tracking of vital signs and early detection of emergencies. Early identification of patient deterioration plays a critical role in preventing complications and reducing mortality.

## **Statement of the Problem**

A study to assess the knowledge regarding digital and wearable technologies in tracking and managing emergencies among nursing students.

## **Objectives**

- To assess the level of knowledge regarding digital and wearable technologies among nursing students.
- To associate the level of knowledge with selected demographic variables.

## **Methodology**

A quantitative research approach with descriptive research design was adopted. The study was conducted at a selected nursing college. The target population consisted of undergraduate nursing students. A total of 80 students were selected using non-probability convenience sampling technique.

## **Description of the Tool**

The tool used for data collection was a structured self-administered questionnaire developed by the investigator based on literature review and guidelines from the World Health Organization on digital health. The tool consisted of two sections: Section I included 10 demographic variables, and Section II consisted of 30 multiple-choice questions assessing knowledge on digital and wearable technologies in emergency management. Equal questions (5 each) were included under six domains. Each correct answer carried one mark, with a maximum score of 30.

Knowledge levels were categorized as:

- Inadequate (0–10)
- Moderate (11–20)
- Adequate (21–30)

Data were analyzed using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (chi-square test). A p-value < 0.05 was considered statistically significant.

## **Data Collection Procedure**

After obtaining permission and ethical clearance from the Institutional Ethics Committee, the investigator created the structured questionnaire using Google Forms. The purpose of the study and informed consent statement were included at the beginning of the form. The Google Form link was shared with nursing students through official WhatsApp groups and email. Participants were

requested to complete the form within the specified time. Responses were automatically collected in Google Sheets, then downloaded, coded, and analyzed using descriptive and inferential statistics.

### Analysis and Interpretation of Data

The collected data were coded and analyzed using descriptive and inferential statistics. Frequency and percentage were used to describe demographic variables, and mean with standard deviation was used to assess knowledge level. Chi-square test was applied to determine association between knowledge level and selected variables. A p-value less than 0.05 was considered statistically significant.

**Table 1: Distribution of Demographic Variables of Nursing Students (N = 80)**

Variable	Category	Percentage (%)
Age	20–21 years	45%
Gender	Female	72.5%
Year of Study	III Year	52.5%
	IV Year	47.5%
Residential Area	Urban	57.5%
Digital Health Training	Not received	65%
Workshop/Seminar Attendance	Not attended	60%
Use of Wearable Devices	Yes	57.5%
Source of Information	Academic Curriculum	32.5%
	Internet	30%

This indicates that although many students use digital tools, formal training exposure remains limited.

**Table 2: Distribution of Nursing Students According to Level of Knowledge (N = 80)**

Level of Knowledge	Frequency (n)	Percentage (%)
Inadequate (0–10)	12	15%
Moderate (11–20)	50	62.5%
Adequate (21–30)	18	22.5%
Total	<b>80</b>	<b>100%</b>

**Table 3: Overall, Knowledge Score Statistics (N = 80)**

Statistical Measure	Value
Mean Score	19.2
Standard Deviation	4.1
Minimum Score	9
Maximum Score	28
Maximum Possible Score	30

**Table 4: Association between Knowledge Level and Selected Demographic Variables (N=80)**

Demographic Variable	$\chi^2$ Value	p-value	Significance
Year of Study	7.26	0.007	Significant*
Previous Digital Training	8.14	0.004	Significant*
Age	2.11	0.348	Not Significant
Gender	1.02	0.598	Not Significant

\* p < 0.05 – Significant, N.S – Not Significant

### Interpretation

The results show that the majority of nursing students (62.5%) had moderate knowledge regarding digital and wearable technologies in emergency management. (22.5%) five percent demonstrated adequate knowledge, while 15% had inadequate knowledge.

A statistically significant association was found between knowledge level and year of study as well as previous digital health training (p < 0.05). Students in higher academic years and those who had undergone digital training exhibited better knowledge scores. No significant association was observed with age or gender.

### Conclusion

The study findings indicate that although most nursing students possess moderate knowledge regarding digital and wearable technologies in emergency management, a notable proportion demonstrate inadequate understanding. This gap may affect effective utilization of digital tools during emergency situations.

Strengthening digital health education within the nursing curriculum through simulation-based learning, workshops on wearable devices, and structured digital competency modules is essential to enhance emergency preparedness and patient safety in technology-driven healthcare environments.

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## **RISK OF STRUCTURAL MALFORMATION AND FETAL LOSS IDENTIFICATION THROUGH ULTRASONOGRAPHY VS GESTATIONAL AGE**

**Muthamilselvi. G**

Sri Manakula Vinayagar Nursing College, Puducherry

### **Abstract**

**Background:** Advancements in Ultrasonography have significantly improved the early detection of fetal abnormalities since its introduction in the 1970s. It allows identification of fetal structural malformations and growth abnormalities more effectively than routine physical assessment, aiding early diagnosis and management.

**Aim:** To compare the level of risk of fetal structural malformations and fetal loss identified through ultrasonography with gestational age based physical assessment among antenatal mothers.

**Methods:** A quantitative descriptive research design was adopted. The study was conducted among 100 antenatal mothers selected using convenience sampling. Data were collected using an antenatal physical assessment format and a structured criteria scale based on ultrasonography reports aligned with WHO fetal growth standards. Risk levels were categorized as mild (1–10), moderate (11–20), and severe (21–30). Data were analyzed using descriptive and inferential statistics, including chi-square tests.

**Results:** Findings revealed that ultrasonography identified 58% of mothers with moderate risk and 2% with severe risk, whereas physical assessment showed 45% moderate and 15% severe risk. This indicates improved accuracy of ultrasonography in detecting fetal abnormalities. A significant association was found between type of family and level of risk, while other demographic variables showed no association.

**Conclusion:** The study concludes that ultrasonography is a highly effective, non-invasive method for early detection of fetal structural malformations and risk of fetal loss. Early diagnosis facilitates timely intervention, reduces maternal anxiety, and improves pregnancy outcomes. Further research is recommended to enhance diagnostic protocols.

**Keywords:** Ultrasonography, Fetal Malformation, Fetal Loss, Antenatal Mothers, Risk Assessment, Gestational Age.

### **Introduction**

Fetal abnormalities and structural malformations are major concerns in antenatal care, contributing to fetal morbidity and mortality. The use of ultrasonography has revolutionized prenatal diagnosis by enabling early detection of anomalies, growth restrictions, and developmental variations. Compared to routine physical assessment, ultrasonography provides more accurate and reliable

information, supporting better clinical decision-making. Early identification of risks such as intrauterine fetal death and congenital abnormalities is essential for timely intervention and improved maternal and fetal outcomes.

### **Statement of the Problem**

A comparative study to identify the level of risk of fetal structural malformation and fetal loss through ultrasonography versus gestational age assessment among antenatal mothers in a selected hospital at Puducherry.

### **Objectives of the Study**

- To assess the level of risk of fetal structural malformations and fetal loss using ultrasonography and gestational age assessment
- To compare the risk identified through ultrasonography with physical assessment
- To associate the level of risk with selected demographic variables

### **Methodology**

A quantitative descriptive approach was used. The study included 100 antenatal mothers selected through convenience sampling. Data were collected using structured tools including demographic profile, physical assessment format, and ultrasonography-based criteria scale. Ethical clearance and informed consent were obtained. Data collection was conducted over 4 weeks and analyzed using descriptive and inferential statistics.

### **Description of the Tools**

#### **Section A: Demographic Variables**

This section consists of baseline information of antenatal mothers, including age, religion, educational status, type of family, area of residence, income, occupation, consanguinity, obstetric history, and adherence to medication and hospital visits.

#### **Section B: Antenatal Physical Assessment Format**

This tool is used to assess the level of risk of fetal structural malformation and fetal loss based on routine clinical examination and gestational age. It includes parameters related to maternal health, fetal growth, and clinical signs. The risk is categorized as mild (1–10), moderate (11–20), and severe (21–30).

#### **Section C: Ultrasonography-Based Structured Criteria Scale**

This investigator-prepared tool is based on Ultrasonography reports and aligned with WHO fetal growth and development standards. It assesses fetal growth parameters and detects structural abnormalities. The scoring system is similar, categorizing risk into mild (1–10), moderate (11–20), and severe (21–30).

### **Data Collection Procedure**

Prior to data collection, formal permission was obtained from the hospital authorities and ethical clearance was secured from the institutional ethics committee. Written informed consent was obtained from all antenatal mothers after explaining the purpose of the study. A total of 100 participants were selected using convenience sampling. Demographic data were collected using a structured proforma. Each participant underwent routine antenatal physical assessment, and relevant clinical findings were recorded. Ultrasonography reports were obtained from hospital records and analyzed using the structured criteria scale. The level of risk for fetal structural malformation and fetal loss was assessed using both physical examination findings and ultrasonography reports. Confidentiality of the participants’ information was strictly maintained throughout the study.

### **Results**

The majority of mothers were aged 21–25 years, with most belonging to Hindu religion and nuclear families. Ultrasonography findings showed a higher detection of moderate risk (58%) and lower severe risk (2%) compared to physical assessment (45% moderate, 15% severe). This demonstrates the superiority of ultrasonography in early and accurate detection of fetal abnormalities. A significant association was found between type of family and risk level.

### **Discussion**

Advancements in imaging technology have greatly enhanced the detection of fetal abnormalities, including chromosomal and structural defects. Ultrasonography allows early diagnosis without invasive procedures, though accuracy still depends on the expertise of healthcare professionals. Early detection plays a crucial role in reducing fetal mortality and improving pregnancy outcomes.

### **Conclusion**

The study concludes that ultrasonography is an effective and safe diagnostic tool for early detection of fetal malformations and risk of fetal loss. It supports early intervention, reduces maternal complications, and improves clinical outcomes. Strengthening diagnostic protocols and promoting early screening can significantly enhance maternal and fetal health.

### **Implications of the Study**

#### **Nursing Practice:**

Nurses can utilize Ultrasonography findings to identify high-risk pregnancies early and provide appropriate antenatal care, counseling, and timely referrals to prevent complications related to fetal malformations and loss.

#### **Nursing Education:**

Nursing students should be trained in interpreting basic ultrasonography reports and understanding fetal growth and development, enabling them to participate effectively in antenatal risk assessment and care.

### **Nursing Administration:**

Nursing administrators can develop standardized antenatal screening protocols incorporating ultrasonography and ensure availability of trained personnel and resources for early detection and management of high-risk pregnancies.

### **Nursing Research:**

The study provides a foundation for further research on improving early diagnostic techniques and comparing different screening methods to enhance accuracy in detecting fetal abnormalities and reducing fetal mortality.

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## **A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE REGARDING TRACKING FITNESS DEVICES AMONG NURSING FACULTIES AT SELECTED NURSING COLLEGES IN PUDUCHERRY**

**Caroline lenoir. A**

College of Nursing, East Coast Institute of Medical Sciences

### **Abstract**

**Background:** Tracking fitness devices such as smart-watches and fitness bands are widely used for monitoring physical activity, heart rate, sleep patterns, and other health parameters. Nursing faculties must possess adequate knowledge regarding these devices to promote digital health awareness and integrate technology into nursing education.

**Aim:** To assess the level of knowledge regarding tracking fitness devices among nursing faculties at selected colleges in Puducherry.

**Methods:** A quantitative descriptive research design was adopted. The study was conducted among 30 nursing faculties selected using non-probability convenient sampling. A structured questionnaire consisting of demographic variables and 30 multiple-choice questions was used. Data were analyzed using frequency, percentage, mean, standard deviation, and chi-square test.

**Results:** Majority (60%) had moderate knowledge, 23.3% had adequate knowledge, and 16.7% had inadequate knowledge. Significant association was found between knowledge level and previous digital training ( $p < 0.05$ ).

**Conclusion:** The study indicates a need to strengthen digital health literacy among nursing faculties through training and workshops.

**Keywords:** Tracking Fitness Devices, Wearable Technology, Nursing Faculty, Digital Health.

### **Introduction**

Digital health technologies have transformed healthcare practice and education. Tracking fitness devices such as smartwatches and wearable bands monitor heart rate, steps, sleep quality, oxygen saturation, and calorie expenditure. These devices support preventive healthcare and lifestyle modification.

The World Health Organization emphasizes the integration of digital health technologies to strengthen health systems and improve healthcare outcomes. Nursing faculties play a crucial role in educating students about emerging technologies. Therefore, assessing their knowledge regarding tracking fitness devices is essential to ensure effective digital health integration in nursing education.

### Statement of the Problem

A study to assess the level of knowledge regarding tracking fitness devices among nursing faculties at selected colleges in Puducherry.

### Objectives

- To assess the level of knowledge regarding tracking fitness devices among nursing faculties.
- To determine the association between knowledge level and selected demographic variables.

### Methodology

A quantitative descriptive research design was used for this study. The study was conducted among 30 nursing faculties working in selected colleges in Puducherry. Participants were selected using non-probability convenient sampling technique. Data were collected using a structured questionnaire consisting of demographic variables and 30 multiple-choice knowledge questions. Each correct answer carried one mark, with a maximum score of 30. Knowledge levels were categorized as inadequate (0–10), moderate (11–20), and adequate (21–30). Data were analyzed using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (chi-square test).

### Analysis and Interpretation of Data

The data were coded and analyzed using descriptive and inferential statistics. Frequencies and percentages described demographic variables, while mean and standard deviation assessed knowledge levels. The Chi-square test examined associations between knowledge levels and selected variables, with  $p < 0.05$  considered statistically significant.

**Table 1: Distribution of Nursing Faculties According to Demographic Variables (N = 30)**

Demographic variables	Options	Frequency	Percentage
Age (Years)	21–30	6	20%
	31–40	12	40%
	41–50	8	26.7%
	Above 50	4	13.3%
Gender	Male	9	30%
	Female	21	70%
Educational Qualification	B.Sc Nursing	6	20%
	M.Sc Nursing	18	60%
	Ph.D Nursing	6	20%

Years of Teaching Experience	0–5 years	10	33.3%
	6–10 years	9	30%
	11–15 years	6	20%
	Above 15 years	5	16.7%
Previous Use of Fitness Device	Yes	17	56.7%
	No	13	43.3%
Exposure to Digital Health Training	Yes	14	46.7%
	No	16	53.3%

Most nursing faculties (40%) were aged 31–40 years. Majority were female (70%). Most of them (60%) had M.Sc Nursing qualification. About 33.3% had 0–5 years of teaching experience. More than half (56.7%) had used a fitness device. However, 53.3% had not received digital health training. Major finding: Most participants were female, M.Sc qualified, and many had not received digital health training

**Table 2: Distribution of Nursing Faculties According to Level of Knowledge (N = 30)**

Level of Knowledge	Frequency (n)	Percentage (%)
Inadequate (0–10)	5	16.7%
Moderate (11–20)	18	60%
Adequate (21–30)	7	23.3%
Total	<b>30</b>	<b>100%</b>

Majority of faculties (60%) had moderate knowledge. About 23.3% had adequate knowledge and 16.7% had inadequate knowledge. Major finding: Most faculties had moderate knowledge.

**Table 3: Overall, Knowledge Score Statistics (N = 30)**

Statistical Measure	Value
Mean Score	18.2
Standard Deviation	3.6
Minimum Score	9
Maximum Score	27
Maximum Possible Score	30

The mean score was 18.2 out of 30, which shows moderate knowledge. The scores ranged from 9 to 27. Major finding: Overall knowledge level was moderate.

**Table 4: Association between Knowledge Level and Selected Variables (N = 30)**

Variable	$\chi^2$ Value	p-value	Significance
Educational Qualification	5.72	0.017	Significant*
Previous Digital Training	6.11	0.013	Significant*
Years of Experience	1.84	0.398	Not Significant
Gender	0.92	0.631	Not Significant

\*p < 0.05 – Significant

There was a significant association between knowledge and educational qualification ( $p = 0.017$ ) and digital training ( $p = 0.013$ ). No significant association was found with gender and teaching experience. Major finding: Higher education and digital training improved knowledge level.

### Discussion

Most nursing faculty (60%) had moderate knowledge of fitness tracking devices, while 23.3% had adequate and 16.7% had inadequate knowledge. The mean score ( $18.2 \pm 3.6$ ) indicates overall moderate awareness. Faculty with prior digital training showed significantly better knowledge ( $p < 0.05$ ). Findings support World Health Organization recommendations on digital literacy, and studies in JMIR and JAMA highlighting that effective use of wearable devices depends on adequate knowledge.

### Conclusion

The study concluded that nursing faculties possess moderate knowledge regarding tracking fitness devices. Significant association was found between knowledge level and educational qualification as well as previous digital training. The findings indicate the need for organizing workshops, continuing nursing education programs, and hands-on training sessions to enhance digital health competency among nursing faculties.

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## **A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE REGARDING PERSONAL SAFETY DEVICES IN TRACKING AND MANAGING EMERGENCIES AMONG ELDERLY PEOPLE AT SELECTED COMMUNITY AREAS PUDUCHERRY**

**Hannah Aswini**

College of Nursing, East Coast Institute of Medical Sciences, Puducherry, 605010

### **Abstract**

**Background:** The elderly population is at increased risk of falls, sudden illness, and delayed emergency response due to age-related physiological changes and chronic conditions. Personal safety devices such as GPS-enabled pendants, emergency alert systems, fall detection devices, and wearable monitoring tools play a significant role in tracking and managing emergencies among older adults. Adequate knowledge regarding these devices is essential to enhance safety and timely intervention.

**Aim:** To assess the knowledge regarding personal safety devices in tracking and managing emergencies among elderly people at a selected community in Puducherry.

**Methods:** A quantitative descriptive research design was adopted. The study was conducted among 30 elderly individuals aged 60 years and above selected using non-probability convenient sampling technique. A structured knowledge questionnaire consisting of 25 multiple-choice questions was used to collect data. Data were analyzed using frequency, percentage, mean, standard deviation, and chi-square test to determine association between knowledge level and selected demographic variables.

**Results:** The findings revealed that majority (53.3%) of elderly people had moderate knowledge, 26.7% had inadequate knowledge, and 20% had adequate knowledge regarding personal safety devices. A significant association was found between knowledge level and educational status ( $p < 0.05$ ).

**Conclusion:** The study highlights the need for community-based awareness programs to improve knowledge and utilization of personal safety devices among elderly people for effective emergency preparedness and safety.

**Keywords:** Personal Safety Devices, Elderly, Emergency Management, Community Health.

### **Introduction**

Population aging is a growing global phenomenon. Elderly individuals are more prone to falls, cardiac emergencies, stroke, and other sudden health conditions. Timely emergency response significantly reduces morbidity and mortality. Personal safety devices such as wearable pendants, GPS tracking devices, fall detection sensors, and panic alert systems enable quick communication and location tracking during emergencies.

Despite technological advancements, awareness and knowledge regarding these devices remain limited among elderly populations, especially in community settings. Community health nurses play a crucial role in educating older adults regarding safety measures and technological aids.

### **Statement of the Problem**

A study to assess the knowledge regarding personal safety devices in tracking and managing emergencies among elderly people at selected community areas Puducherry.

### **Objectives**

- To assess the level of knowledge regarding personal safety devices among elderly people.
- To associate the level of knowledge with selected demographic variables.

### **Assumptions:**

- Elderly people may have varying levels of knowledge regarding personal safety devices used for emergency tracking and management.
- Personal safety devices can improve safety and timely emergency response among elderly individuals.
- Knowledge regarding personal safety devices may be influenced by demographic factors such as age, education, and previous exposure to technology.
- Elderly participants will provide honest and accurate responses during data collection.
- Increasing awareness about personal safety devices can enhance emergency preparedness among elderly people.

### **Delimitations**

The study is delimited to:

- Elderly people aged 60 years and above only.
- Elderly individuals residing in the selected community area of Puducherry.
- Sample size limited to 30 participants.
- Study confined to assessment of knowledge only, not attitude or practice.

### **Methodology**

A quantitative research approach was adopted to measure the level of knowledge regarding personal safety devices among elderly individuals using structured assessment tools. A descriptive research design was used to assess knowledge related to devices for tracking and managing emergencies. The study was conducted in Ariyankuppam, Puducherry, selected for its accessible elderly population, feasibility of data collection, and community support. The population comprised individuals aged 60 years and above residing in the selected community. The sample included eligible participants available during the data collection period, with a total sample size

of 30 elderly individuals. A non-probability convenience sampling technique was used to select participants.

### **Criteria for Sample Selection**

#### **Inclusion Criteria**

##### **Elderly people who:**

- Were aged 60 years and above
- Were residing in the selected community
- Were able to understand Tamil or English
- Were willing to participate

#### **Exclusion Criteria**

##### **Elderly people who:**

- Had severe cognitive impairment
- Were critically ill or bedridden
- Were not available during data collection

#### **Variables of the Study**

Study Variable: Knowledge regarding personal safety devices for emergency tracking and management.

Demographic Variables: Age, gender, educational status, occupation, monthly income, type of family, living arrangement, previous exposure to safety devices, and source of information.

#### **Development and Description of the Tool**

A structured interview schedule was developed after extensive review of literature and expert consultation.

#### **Tool Consisted of Two Sections**

**Section A:** Demographic Variables included personal details such as age, gender, education, occupation, income, living status, and source of awareness.

**Section B:** Knowledge Questionnaire consisted of 20 multiple-choice questions covering types of personal safety devices, emergency alert systems, GPS tracking devices, fall detection systems, medical alert devices, mobile safety applications, and their usage and benefits. Each correct answer was awarded 1 mark, while incorrect answers received 0 marks.

#### **Scoring Interpretation**

<b>Knowledge Level</b>	<b>Score</b>	<b>Percentage</b>
Inadequate Knowledge	0–7	<35%
Moderately Adequate	8–14	36–70%
Adequate Knowledge	15–20	>70%

### Validity of the Tool

The tool was submitted to experts in Community Health Nursing, Medical Surgical Nursing, Gerontology, and Public Health. Based on their suggestions, necessary modifications were made to ensure content validity.

### Reliability of the Tool

Reliability of the knowledge questionnaire was established using the split-half method/Cronbach's alpha. A reliability coefficient value  $\geq 0.7$  indicated acceptable reliability.

### Data Collection Procedure

Prior to data collection, ethical clearance was obtained from the Institutional Ethical Committee, and formal permission was secured from the concerned community authorities in Puducherry. The investigator visited the selected community, identified eligible elderly participants using a convenient sampling technique, and explained the study purpose before obtaining written informed consent. Rapport was established to ensure participant comfort and cooperation. Data were collected using a structured interview schedule, with the knowledge questionnaire administered through interviews for better understanding. Each session lasted about 15–20 minutes. Confidentiality and anonymity were strictly maintained throughout the study.

### Period of Data Collection

Data collection was conducted over a period of 4 weeks.

### Data Analysis and Interpretation

Data collected from 30 elderly people were analyzed using descriptive and inferential statistics.

### Section I: Distribution of Elderly People According to Demographic Variables

**Table 4.1: Distribution of Participants According to Age (n = 30)**

Age Group (Years)	Frequency	Percentage (%)
60–65	12	40
66–70	8	26.7
71–75	6	20
Above 75	4	13.3

**Table 4.2: Distribution According to Gender**

Gender	Frequency	Percentage (%)
Male	13	43.3
Female	17	56.7

**Table 4.3: Distribution According to Educational Status**

Education	Frequency	Percentage (%)
Illiterate	7	23.3
Primary	14	46.7
Secondary	6	20
Graduate	3	10

**Table 4.4: Previous Awareness Regarding Safety Devices**

Awareness	Frequency	Percentage (%)
Yes	9	30
No	21	70

## Section II: Level of Knowledge Regarding Personal Safety Devices

**Table 4.5: Level of Knowledge Among Elderly People**

Knowledge Level	Frequency	Percentage (%)
Inadequate	14	46.7
Moderately Adequate	11	36.6
Adequate	5	16.7

**Table 4.6: Mean and Standard Deviation of Knowledge Scores**

Variable	Mean	Standard Deviation
Knowledge Score	9.8	3.2

## Section III: Association Between Knowledge Level and Demographic Variables

**Table 4.7: Association Between Education and Knowledge Level**

Education	$\chi^2$ Value	Df	p-value	Significance
Educational Status	8.21	2	0.016	Significant

**Table 4.8: Association Between Previous Awareness and Knowledge**

Variable	$\chi^2$ Value	df	p-value	Result
Previous Awareness	6.45	1	0.01	Significant

Hence, research hypothesis was accepted for selected variables.

The study assessed knowledge regarding personal safety devices for tracking and managing emergencies among elderly individuals in a selected community in Puducherry. Most participants (40%) were aged 60–65 years, with females (56.7%) outnumbering males (43.3%). Educational levels were generally low, with 46.7% having primary education and 23.3% being illiterate. The majority (63.3%) lived with family, yet 70% had no prior awareness of personal safety devices. Knowledge assessment showed that 46.7% had inadequate knowledge, 36.6% had moderate knowledge, and only 16.7% had adequate knowledge, with a mean score of  $9.8 \pm 3.2$ , indicating overall moderate to poor understanding. Deficits were noted in areas such as GPS tracking, fall

detection systems, medical alert devices, and mobile safety applications, though basic emergency communication knowledge was relatively better.

Educational status and prior awareness showed a significant association with knowledge levels ( $p < 0.05$ ), while age, gender, family type, and occupation were not significantly associated. Overall, the findings highlight limited awareness among the elderly and emphasize the need for community-based educational interventions to improve knowledge and promote the use of personal safety devices for better emergency preparedness.

### **Discussion**

The study assessed knowledge regarding personal safety devices for tracking and managing emergencies among elderly individuals. Findings showed that nearly half of the participants had inadequate knowledge, likely due to limited technological exposure and lack of awareness programs. These results are consistent with previous studies indicating low awareness of digital and wearable safety technologies among the elderly. Educational status was significantly associated with knowledge levels, with more educated individuals demonstrating better awareness. Participants with prior exposure to safety devices also had higher knowledge, highlighting the importance of training and awareness programs. Overall, the findings emphasize the need for community health initiatives to improve elderly safety and emergency preparedness.

### **Summary**

The study titled “A study to assess the knowledge regarding personal safety devices in tracking and managing emergencies among elderly people in a selected community in Puducherry” was conducted using a quantitative descriptive design among 30 elderly participants. The findings revealed that 53.3% of participants had moderate knowledge, 26.7% had inadequate knowledge, and only 20% had adequate knowledge regarding personal safety devices. A statistically significant association was found between knowledge level and educational status as well as prior awareness ( $p < 0.05$ ), while variables such as age and gender showed no significant association.

### **Nursing implications**

#### **1. Nursing Practice**

Community health nurses educate elderly people about safety technologies and promote the use of wearable emergency devices for quick assistance. They assess individual needs and recommend suitable assistive devices based on health conditions. During home visits, nurses demonstrate the use of these devices and ensure proper understanding. They also identify barriers such as lack of awareness or difficulty in use. Appropriate guidance is provided to improve acceptance and effective utilization.

## **2. Nursing Education**

Nursing education should include geriatric safety and the use of modern technologies in elderly care. Students are taught about assistive and emergency devices through both theory and practical training. Simulation and skill-based learning help improve competency. Nursing students can also conduct community awareness programs for the elderly. This enhances their communication skills and practical experience.

## **3. Nursing Administration**

Nursing administrators are responsible for organizing community-based programs focusing on elderly safety. They conduct training sessions and awareness programs for both elderly individuals and caregivers. Collaboration with NGOs and health agencies helps in expanding program reach. Administrators ensure the availability of necessary resources and trained staff. They also develop policies to integrate geriatric safety into routine healthcare services.

## **4. Nursing Research**

Nursing research helps evaluate the effectiveness of safety training programs for the elderly. Studies assess outcomes such as reduction in accidents and improved emergency response. Comparative research between rural and urban populations provides useful insights. It also identifies barriers to the adoption of safety technologies. The findings support the development of improved interventions and healthcare policies.

## **Recommendations**

- Similar study can be conducted with larger sample size.
- Experimental studies can assess effectiveness of awareness programmes.
- Studies may include attitude and practice components.
- Comparative studies between institutionalized and community elderly can be undertaken.
- Development of mobile-based elderly safety education modules is recommended.

## **Conclusion**

The study concludes that elderly people possess insufficient knowledge regarding personal safety devices used for emergency tracking and management. Improving awareness through community education programmes can enhance safety, independence, and emergency response among elderly populations. Community health nurses should implement structured educational interventions, demonstrations, and awareness campaigns to improve knowledge and promote utilization of personal safety devices. Enhancing awareness can significantly contribute to early emergency response, reduction of complications, and improved quality of life among elderly people in community settings.

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## **EFFECT OF APPLICATION OF INFRAD DEVICE ON WOUND HEALING AMONG PATIENTS WITH TYPE II DIABETES MELLITUS AND FOOT ULCER AT A SELECTED HOSPITAL, PUDUCHERRY**

**Dhivya N**

Department of Medical Surgical Nursing, Kasturba Gandhi Nursing College, Puducherry

### **Abstract**

**Background:** Diabetes mellitus is a chronic disease that can lead to complications such as diabetic foot ulcers, resulting in infection, delayed healing, and possible amputation. Effective wound care is essential, and the INFRAD device is a therapeutic approach that may enhance healing.

**Aim:** To evaluate the effectiveness of the INFRAD device on wound healing among patients with type II diabetes mellitus and foot ulcers.

**Methods:** A quantitative randomized controlled trial design was used. Sixty patients were selected through simple random sampling and divided into experimental (30) and control (30) groups. Pre-test and post-test wound assessments were conducted using a structured tool. The experimental group received INFRAD therapy along with routine care, while the control group received only routine care. Data were analyzed using descriptive and inferential statistics, including an independent t-test.

**Results:** The post-test results showed a significant improvement in wound healing in the experimental group compared to the control group ( $t = 5.632, p < 0.001$ ), while no significant difference was found in the pre-test.

**Conclusion:** The INFRAD device is effective in promoting wound healing among patients with diabetic foot ulcers and can be used as a supportive therapy along with routine care.

**Keywords:** INFRAD Device, Diabetic Foot Ulcer, Wound Healing, Type II Diabetes Mellitus.

### **Introduction**

Diabetes Mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. Type II Diabetes Mellitus (T2DM), the most prevalent form, is associated with insulin resistance and relative insulin deficiency. One of the major complications of diabetes is the development of diabetic foot ulcers (DFU). These ulcers occur due to peripheral neuropathy, ischemia, and impaired immune response. Neuropathy reduces sensation, delaying detection of injury, while poor circulation and hyperglycaemia impair the wound healing process. These factors contribute to prolonged inflammation, reduced collagen synthesis, and increased risk of infection, which may ultimately lead to gangrene or amputation.

## Need for the Study

Diabetic foot ulcers are a major clinical concern globally, with a prevalence of approximately 6.3% among diabetic patients. The burden is increasing due to rising diabetes prevalence, especially among older adults. Infrared (INFRAD) therapy has shown potential in improving wound healing by enhancing tissue granulation, reducing inflammation, and preventing infection. However, limited studies exist in the local context. Hence, this study was undertaken to evaluate the effectiveness of the INFRAD device in promoting wound healing among patients with diabetic foot ulcers.

## Objectives

- To evaluate the effectiveness of the INFRAD device on wound healing among patients with Type II diabetes mellitus and foot ulcer.
- To associate wound healing outcomes with selected demographic and clinical variables.

## Hypotheses

- **H1:** There is a significant difference in the level of wound healing among patients with Type II diabetes mellitus and foot ulcer.
- **H2:** There is a significant association between wound healing and selected demographic and clinical variables among patients subjected to INFRAD therapy.

## Operational Definitions

**Effect:** Improvement in wound healing measured using pre-test and post-test scores on the Bates-Jensen scale.

**INFRAD Device:** A device that emits infrared radiation to promote wound healing by preventing infection and enhancing tissue repair.

**Type II Diabetes Mellitus:** A metabolic disorder characterized by insulin resistance.

**Foot Ulcer:** An open sore occurring due to poor glycaemic control, neuropathy, or vascular insufficiency.

**Wound Healing:** The physiological process of tissue repair and regeneration.

## Review of Literature

The literature review was organized into three sections:

### Section A: Prevalence of Diabetes Mellitus

Studies highlight increasing prevalence of diabetes and emphasize the importance of patient education and self-care practices.

### Section B: Interventions for Diabetic Foot Ulcer

Research indicates that advanced therapies such as Hyperbaric Oxygen Therapy significantly improve wound healing compared to conventional methods.

### Section C: Infrared Therapy in Wound Healing

Studies demonstrate that infrared and photobiomodulation therapies significantly reduce wound size and improve healing outcomes in diabetic patients.

#### Methodology

The study adopted a quasi-experimental research design with experimental and control groups to evaluate the effect of the intervention. The sample consisted of 60 patients selected for the study. Participants were chosen using a simple random sampling technique to ensure equal representation and minimize selection bias.

#### Inclusion Criteria

- Patients aged 40–70 years
- Diagnosed with Type II diabetes mellitus and foot ulcer (Grade 0–5)
- Able to understand Tamil or English

#### Exclusion Criteria

- Type I diabetes mellitus
- Patients unwilling to participate
- Patients with neurological disorders or pregnancy

#### Description of tool

**Section A:** It included age, sex, residential area, religion, educational qualification, occupational status, family history of diabetes mellitus, duration of diabetes mellitus, duration of regular treatment, unhealthy habits specific health practices, sources of information about diabetes mellitus and data were collected using interview method.

**Section B: clinical variables:** Structured tool included fasting blood glucose level, postprandial blood glucose level, blood pressure, temperature, HDL, LDL, cardiac diseases, vascular diseases, diabetic foot and duration of wound caused, which was collected from the clinical record and using interview method.

**Section C: Wound Assessment Tool:** Bates Jensen Wound Assessment Tool was used to assess the wound status of the diabetic foot ulcer patients

#### Score Interpretation

Score	Interpretation
1- 12	Tissue health
13 – 59	Wound regeneration
≥ 60	Wound degeneration

#### Description of the procedure

##### Content validity of the tool

The tool was given to the nursing experts for content validity. The suggestions given by the experts were incorporated and tool was finalized.

### Ethical consideration

Ethical clearance was obtained from the Institutional Ethical Committee (IEC). The formal permission was obtained from the hospital authority to do the data collection. Informed consent was obtained from study subjects both in oral and written form. The subjects having freedom to withdraw from the study at any time.

### Plan for data analysis

Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe the distribution of demographic and clinical variables among the experimental and control groups. Inferential statistics were applied using the paired *t*-test to compare wound healing between the two groups, while the Chi-square test was used to determine the association between wound healing and selected demographic and clinical variables.

### Data analysis and interpretation

**Section A:** Distribution of Demographic variables and clinical variables among patients with Type II diabetes mellitus and foot ulcer in experimental and control group.

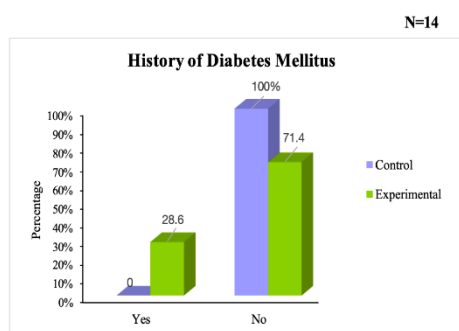


Figure 4.1.6: Distribution of history of diabetes mellitus among experimental and control group

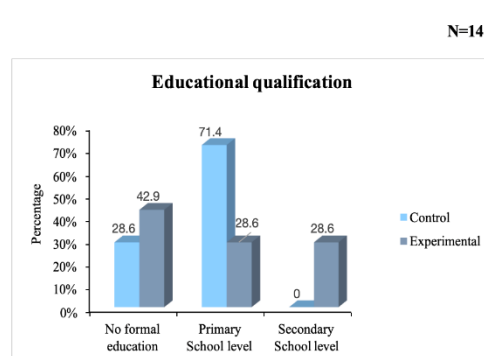


Figure 4.1.5: Distribution of educational qualification among experimental and control group

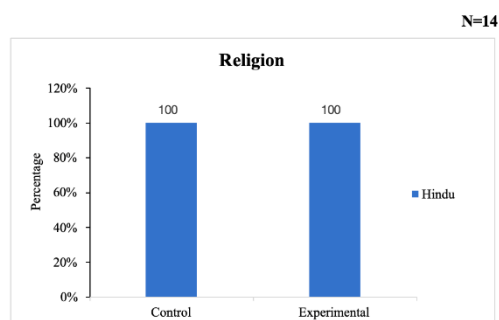


FIGURE 4.1.4: Distribution of religion among experimental and control group

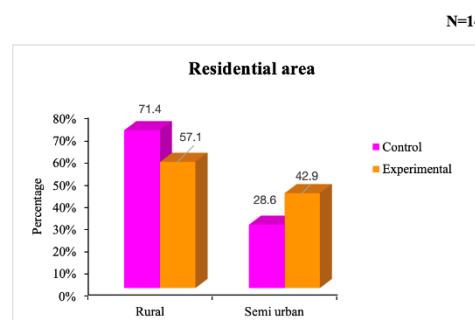
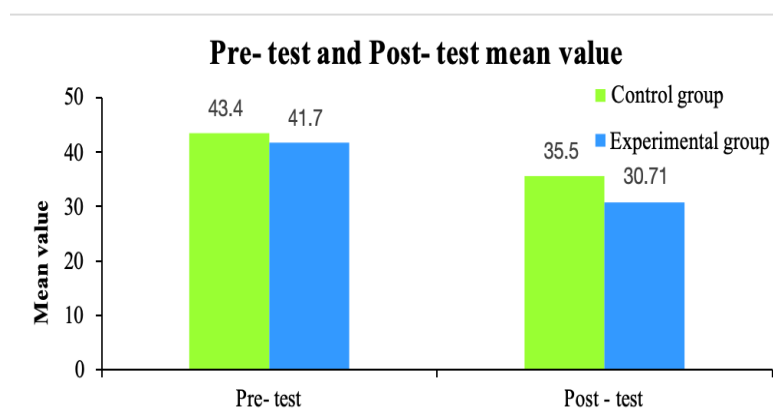


Figure 4.1.3: Distribution of residential area among experimental and control group

**Section B:** Comparison of wound healing between experimental and control group.



**Section C:** Association between wound healing among diabetic foot ulcer patients with their selected demographic and clinical variables.

S. No	Demographic variables & Clinical variables		Column N	Pre- test					MW/ KW test	p- value
				Mean	SD	Median	Percentile 25	Percentile 75		
1.	Age	<40 years	1	42	--	42	42	42	0.185	0.9116 NS
		40-55 years	8	42.5	3.9	42.5	40	45.5		
		56-70 years	5	42.8	1.3	42	42	43		
2.	Gender	Male	10	43	2.7	42	42	44	0.047 3	0.8279 NS
		Female	4	41.5	3.9	42.5	39	44		
3.	Residential Area	Rural	9	42.89	2.8	42	42	43	0.074 7	0.7846 NS
		Semi urban	5	42	3.5	43	42	44		
4.	Educational Qualification	No formal education	5	43	3	42	42	43	0.176 7	0.9154 NS
		Primary School level	7	42.14	3.5	42	40	45		
		Secondary School level	2	43	1.4	43	42	44		
5.	Family History of Diabetes Mellitus	yes (specify who is affected & how long)	2	42.5	0.7	42.5	42	43	0.008 8	0.9999 NS
		No	12	42.58	3.2	42	41	44.5		

6.	If yes specify the relationship and duration	<1 years	12	42.58	3.2	42	41	44.5	0.3765	0.9844 NS
		1 -5 years	1	42	--	42	42	42		
		above 10 years	1	43	--	43	43	43		
7.	Dietary Practices	High calorie diet	12	42.83	3.1	42.5	42	44.5	1.8477	0.397 NS
		More spicy diet	1	42	--	42	42	42		
		Others	1	40	.	40	40	40		
8.	Unhealthy habits	Smoking	4	43.5	3	42	42	45	0.8106	0.6668 NS
		Alcoholism	5	43.2	2.6	43	42	44		
		None of the above	5	41.2	3.4	42	40	43		
9.	Fasting Blood glucose (mg/dl)	100 to 125 mg/dl	6	44	3	43.5	42	47	2.1191	0.1455 NS
		>126 mg/dl	8	41.5	2.6	42	41	42.5		
10.	Post prandial blood glucose level (mg/dl)	<140 mg/dl	1	48	.	48	48	48	4.878	0.1809 NS
		140 - 160 mg/dl	7	42.57	2.4	42	40	44		
		161 - 180 mg/dl	3	43.33	1.5	43	42	45		
		181 - 200 mg/dl	3	40	3.5	42	36	42		

### Major finding of the study

Comparison pretest and post-test Wound Healing score among patients with Type II diabetes mellitus and foot ulcer between the experimental group and comparison in the control group N=60

Group	Pretest			Post Test			Mean Difference score	Paired ‘t’ test & p-value
	Median	Mean	S.D	Median	Mean	S.D		
Experimental Group (30)	42.0	42.47	12.93	21.5	21.93	10.15	20.54	t = 20.683 p=0.0001, S**
Control Group (30)	34.0	39.47	13.63	33.5	39.30	13.49	0.17	t = 1.409 p=0.169, NS

### Discussion

The findings revealed a significant improvement in wound healing among patients with Type II diabetes mellitus and foot ulcers following the application of INFRAD therapy, indicating its effectiveness. Hence, the stated hypothesis H1 was accepted. Although wound healing was significantly better in patients who received INFRAD therapy compared to those who did not, no significant association was found between wound healing and selected demographic and clinical variables such as age, gender, residential area, education, family history of diabetes, dietary practices, unhealthy habits, blood glucose levels, HbA1c, blood pressure, temperature, BMI, lipid profile, duration of diabetes, treatment history, and duration of foot ulcer. Therefore, the stated hypothesis H2 was not accepted.

### Implications

The Nurse working in hospital setting can motivate about INFRAD lamp which is effectively follow and can easily adapt as in the integral of their nursing profession the present study showed that prevalence of Diabetic foot ulcer is more common and concentration must be made by all health nurse to increase practice of INFRAD lamp and it could be easily practice and make use of it.

Prepare student nurse and staff nurses with adequate knowledge regarding promotion of wound healing in diabetes mellitus as they can utilize the knowledge in giving health education among hospitalized patient and in the community settings.

### Conclusion

The effectiveness of application of INFRAD device on wound healing among patients with type II diabetes mellitus and foot ulcer at selected hospital. The study concludes that the regular practice of INFRAD lamp promotes the wound healing in diabetic foot ulcer.

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## **A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF RAGI BALL VERSUS SUPPLEMENT TO INCREASE HEMOGLOBIN LEVEL AMONG THE ADULT GIRLS AT SMVNC, PUDUCHERRY**

**G. Sathyavathy**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** Anemia is a common nutritional deficiency among adolescent and adult girls, affecting physical and cognitive health. Iron supplements are effective but often have side effects, whereas Ragi (finger millet), a natural iron-rich food, may be a better alternative.

**Aim:** To compare the effectiveness of Ragi ball and iron supplements in increasing hemoglobin levels among adult girls.

**Methods:** A quantitative quasi-experimental comparative design was used. Eighty adult girls with mild to moderate anemia were selected using purposive sampling and divided into two groups. One group received Ragi ball, and the other received iron supplements daily for four weeks. Hemoglobin levels were assessed before and after the intervention, and data were analyzed using descriptive and inferential statistics.

**Results:** Both groups showed improvement in hemoglobin levels, but the Ragi ball group had a greater increase compared to the iron supplement group. Significant associations were found with selected demographic variables.

**Conclusion:** Ragi ball is an effective, safe, and culturally acceptable method to improve hemoglobin levels and can be used as an alternative or complement to iron supplementation.

**Keywords:** Anemia, Ragi Ball, Iron Supplements, Hemoglobin, Adult Girls, Nutritional Intervention.

### **Introduction**

Anemia is a common nutritional deficiency among adult girls and is mainly caused by iron deficiency. Low hemoglobin levels can result in fatigue, weakness, reduced concentration, and decreased work capacity. Adult girls are more vulnerable to anemia due to menstrual blood loss, increased nutritional needs, and inadequate dietary intake.

Iron supplementation is widely used to increase hemoglobin levels and prevent anemia. However, regular intake of iron supplements may lead to side effects such as nausea, constipation, and gastric discomfort, which can affect compliance. Therefore, there is a need to explore safe, affordable, and natural dietary alternatives to improve hemoglobin levels. Ragi (finger millet) is a nutrient-rich cereal containing iron and other essential nutrients. Ragi ball is a traditional, cost-effective,

and easily available food. Hence, this study aims to compare the effectiveness of ragi ball and iron supplements in increasing hemoglobin levels among adult girls at SMVNC.

### **Statement of the Problem**

A Comparative Study to Assess the Effectiveness of Ragi Ball Versus Iron Supplement to Increase Hemoglobin Level Among the Adult Girls At SMVNC, Puducherry.

### **Objectives of the Study**

- To assess the pre-test hemoglobin levels among adult girls
- To assess the post-test hemoglobin levels after administration of ragi ball among adult girls
- To assess the post-test hemoglobin levels after administration of iron supplements among adult girls
- To compare the mean pre-test and post-test hemoglobin levels in the ragi ball group.
- To compare the mean pre-test and post-test hemoglobin levels in the iron supplement group.
- To compare the effectiveness of ragi ball and iron supplement in improving hemoglobin levels among adult girls
- To find the association between post-test hemoglobin levels and selected demographic variables among adult girls

### **Research Hypothesis**

- H<sub>1</sub>: There will be a significant difference between the mean pre-test and post-test hemoglobin levels among adult girls who receive ragi ball at SMVNC.
- H<sub>2</sub>: There will be a significant difference between the mean pre-test and post-test hemoglobin levels among adult girls who receive iron supplements at SMVNC.
- H<sub>3</sub>: There will be a significant difference in the post-test hemoglobin levels between adult girls who receive ragi ball and those who receive iron supplements at SMVNC.
- H<sub>4</sub>: There will be a significant association between post-test hemoglobin levels and selected demographic variables among adult girls at SMVNC

### **Research Methodology**

A quantitative research approach was adopted for the present study, utilizing a quasi-experimental comparative research design. The study was conducted at SMVNC, Puducherry. The target population comprised all adult girls studying at SMVNC, Puducherry. The sample included adult girls who met the specified inclusion criteria. A non-probability purposive sampling technique was employed to select the participants for the study. The total sample size consisted of 60 adult girls,

with 30 participants assigned to the ragi ball group and 30 participants to the iron supplement group.

### **Inclusion Criteria**

- Aged 18–25 years
- Have mild to severe anemia (based on hemoglobin levels)
- Willing to participate and provide informed consent
- Available for the entire duration of the intervention
- Have no chronic illnesses affecting hemoglobin levels (e.g., thalassemia, kidney disease)
- Not currently taking any iron supplements or hematinic medications
- Have regular dietary habits and are able to consume ragi ball

### **Exclusion Criteria**

- Below 18 years or above 25 years
- Have chronic illnesses affecting hemoglobin levels (e.g., thalassemia, kidney disease, liver disorders)
- Currently taking iron supplements, multivitamins, or hematinic medications
- Have allergies or intolerance to ragi or iron supplements
- Unwilling to participate or unable to provide informed consent
- Unavailable for the full duration of the intervention

### **Variables**

- Independent Variable: Ragi ball and iron supplement
- Dependent Variable: Hemoglobin level

### **Interventions**

#### **Experimental Group-i (Ragi Ball Group)**

The adult girls with anemia in the experimental group-I to be received Ragi ball supplementation in addition to their routine diet. The Ragi ball was prepared using standardized measures to ensure uniform nutrient content and was administered once daily for a specified intervention period 30 days. Participants were instructed to consume the Ragi ball regularly under supervision to ensure compliance. Health education was also provided, which included information on the importance of Iron-rich foods, balanced diet, factors affecting Iron absorption, and healthy dietary practices to improve Hemoglobin levels.

#### **Experimental Group-ii (Iron Supplement Group)**

The adult girls with anemia in the experimental group-ii to be received oral iron supplementation as prescribed, along with their routine diet. The supplementation was administered daily for the same duration as the experimental group-II. Participants were monitored for regular intake and possible side effects such as nausea or gastric discomfort etc.

Each session of supplementation and education required approximately 15–20 minutes per day.

### Description of the Tool

#### Section A: Demographic Data

Tool Section A consisted of a structured questionnaire used to collect baseline demographic and health-related information of the participants. It included details on age, religion, education, marital status, type of family, and monthly family income. It also covered clinical variables such as previous and family history of anemia, menstrual flow pattern, history of allergy to iron supplements, prior intake of iron supplements, and age at menarche. This tool helped in understanding the background characteristics of the study participants.

#### Section B

S. No	Content	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Section A: Dietary & Nutritional Habits						
1.	I consume iron-rich foods (green leafy vegetables, ragi, jaggery, meat) regularly.					
2.	I avoid tea or coffee immediately after meals.					
3.	I consume milk at a time that does not interfere with iron absorption.					
4.	I maintain a balanced diet that supports my health.					
Section B: Lifestyle factors						
5.	I engage in regular physical activity.					
6.	I get adequate sleep every night (6–8 hours)					
7.	I drink sufficient water daily (1–2 liters or more).					

Section C: Mental Health						
8.	My menstrual cycles are regular.					
9.	I do not experience heavy menstrual bleeding.					
10.	I do not experience severe menstrual pain or clots.					
Section D: Anemia Symptoms (Pre-Intervention)						
11.	I often feel fatigued or tired.					
12.	I experience dizziness or lightheadedness frequently.					
13.	I feel breathless during routine activities.					
14.	My skin looks pale compared to normal.					
15.	I frequently experience headaches related to weakness or anemia.					
Section E: Intervention Compliance						
16.	I consumed the assigned intervention (ragi ball or iron supplement) consistently.					
17.	I followed the instructions given by the researcher carefully.					
18.	I did not skip doses of the intervention without valid reasons.					
Section F: Post-Intervention Symptoms & Effectiveness						
19.	I feel more energetic after taking the intervention.					
20.	My dizziness or lightheadedness has reduced.					

21.	I experience less breathlessness during daily activities.					
22.	My skin color appears healthier.					
23.	I have fewer headaches related to fatigue or weakness.					
24.	I feel more energetic after taking the intervention.					
25.	My dizziness or lightheadedness has reduced.					
26.	I experience less breathlessness during daily activities.					
27.	My skin color appears healthier.					
28.	I have fewer headaches related to fatigue or weakness.					
<b>Section G: Acceptability &amp; Side Effects</b>						
29.	The intervention (ragi ball or iron supplement) was easy to consume.					
30.	The taste of the intervention was acceptable.					
31.	I experienced minimal or no side effects from the intervention.					
32.	I am willing to continue using the intervention in the future.					

**Scoring interpretation**

<b>Interpretation</b>	<b>Score</b>
110–135	Excellent outcome
85–109	Good outcome
60–84	Fair outcome
<60	Poor outcome

## Data Analysis and Interpretation

Section A: Description of the Demographic Variables among Adult Girls in Ragi Ball Group and Iron Supplement Group at SMVNC.

Section B: Assessment of the Hemoglobin Level among Adult Girls in Ragi Ball Group and Iron Supplement Group at SMVNC.

Section C: Comparison of the Effectiveness of Ragi Ball versus Iron Supplement on Hemoglobin Level among Adult Girls at SMVNC

Section D: Association Between Level of Hemoglobin and Selected Demographic Variables among Adult Girls in the Ragi Ball Group and Iron Supplement Group at SMVNC.

### Section A: Description of the Demographic Variables among Adult Girls in Ragi Ball Group and Iron Supplement Group at SMVNC

Variable	Category	Ragi Ball Group (n)	Ragi Ball (%)	Iron Supplement Group (n)	Iron Supplement (%)
Age (years)	18–19	11	27.5	14	35
	20–21	22	55	16	40
	22–23	6	15	8	20
	24–25	1	2.5	2	5
Religion	Hindu	30	75	27	67.5
	Muslim	5	12.5	3	7.5
	Christian	5	12.5	10	25
Education	UG	36	90	35	87.5
	PG	4	10	5	12.5
Marital Status	Unmarried	40	100	40	100
Type of Family	Nuclear	26	65	8	20
	Joint	12	30	24	60
	Extended	2	5	8	20
Monthly Income	≤₹10,000	4	10	7	17.5
	₹10,001–20,000	20	50	8	20
	₹20,001–30,000	12	30	16	40
	>₹30,000	4	10	9	22.5
History of Anemia	Yes	30	75	33	82.5
Family History of Anemia	Yes	6	15	13	32.5
Menstrual Flow	Moderate	28	70	20	50

	Scanty	7	17.5	11	27.5
	Heavy	5	12.5	9	22.5
Allergy to Iron Supplements	No	40	100	40	100
Previous Iron Intake	Yes	5	12.5	2	5
Age at Menarche (years)	10	1	2.5	0	0
	11	1	2.5	1	2.5
	12	7	17.5	1	2.5
	13	10	25	11	27.5
	14	8	20	4	10
	15	7	17.5	12	30
	16	6	15	11	27.5

**Section B: Assessment of the Hemoglobin Level among Adult Girls in Ragi Ball Group and Iron Supplement Group at SMVNC.**

Variable	Category	Ragi Ball Group (n)	Ragi Ball (%)	Iron Supplement Group (n)	Iron Supplement (%)
Hemoglobin Level (Pre-test)	Normal	14	35	28	70
	Mild Anemia	26	65	12	30

**Mean Hemoglobin Comparison**

Group	Mean (g/dL)	Standard Deviation
Ragi Ball Group	11.80	1.49
Iron Supplement Group	14.85	2.59

**Effectiveness Comparison (Independent t-test)**

Variable	Mean Difference	t-value	df	p-value	Significance
Hemoglobin Level	3.05	6.462	78	0.001	Significant

In comparison, the Iron Supplement Group demonstrated a higher mean hemoglobin level of 14.85 g/dL with a standard deviation of 2.59, suggesting both a higher average hemoglobin level and greater variability among participants

**Section C: Comparison of the Effectiveness of Ragi Ball versus Iron Supplement on Hemoglobin Level among Adult Girls at SMVNC**

Group	Mean Hemoglobin (g/dL)	Standard Deviation
Ragi Ball Group	11.80	1.49
Iron Supplement Group	14.85	2.59

### Statistical Comparison

Variable	Mean Difference	t-value	df	p-value	Significance
Hemoglobin Level	3.05	6.462	78	0.001	Significant

**Interpretation:** The Iron Supplement Group showed significantly higher hemoglobin levels compared to the Ragi Ball Group, indicating that iron supplementation was more effective in improving hemoglobin levels among adult girls.

### Section D: Association Between Level of Hemoglobin and Selected Demographic Variables among Adult Girls in the Ragi Ball Group and Iron Supplement Group at SMVNC

In the Ragi Ball Group, no significant association was found between hemoglobin levels and most demographic variables. However, a near-significant trend was observed with previous history of anemia ( $p = 0.056$ ).

In the Iron Supplement Group, significant associations were found with type of family ( $p = 0.001$ ), monthly income ( $p = 0.005$ ), previous history of anemia ( $p = 0.005$ ), family history of anemia ( $p = 0.001$ ), menstrual flow ( $p = 0.020$ ), and age at menarche ( $p = 0.011$ ). No significant association was observed with age, religion, or education.

### Discussion

The study assessed hemoglobin levels among adult girls with anemia and found a notable prevalence of mild anemia, especially in the Ragi Ball group. The mean pre-test hemoglobin level was  $11.80 \pm 1.49$  g/dL in the Ragi Ball group and  $14.85 \pm 2.59$  g/dL in the Iron Supplement group, indicating comparatively lower baseline levels in the dietary group. Both interventions resulted in improved hemoglobin levels, with significant differences observed between pre-test and post-test values in each group, supporting the effectiveness of both methods. However, iron supplementation demonstrated significantly greater improvement compared to Ragi Ball, confirming its higher efficacy in increasing hemoglobin levels.

Further analysis showed that in the Iron Supplement group, post-test hemoglobin levels were significantly associated with factors such as type of family, monthly income, previous and family history of anemia, menstrual flow, and age at menarche, whereas variables like age, religion, and education were not significantly associated. These findings suggest that physiological and socio-economic factors influence anemia outcomes even after intervention. Overall, the study highlights that while Ragi Ball serves as a safe, natural, and cost-effective approach, iron supplementation remains more effective for rapid improvement of hemoglobin levels among adult girls.

### Major Findings

- Mild anemia was prevalent among participants, particularly in the Ragi Ball group (65%).
- In the Iron Supplement group, a higher proportion had normal hemoglobin levels (70%) at baseline.

- Mean hemoglobin levels were  $11.80 \pm 1.49$  g/dL (Ragi Ball) and  $14.85 \pm 2.59$  g/dL (Iron Supplement).
- Both interventions improved hemoglobin levels significantly.
- Iron supplementation was more effective than Ragi Ball ( $p < 0.05$ ).
- Ragi Ball is a safe and economical dietary method, while iron supplements provide faster correction of anemia.

### Conclusion

- The study concluded that both Ragi ball and Iron supplement interventions were effective in improving hemoglobin levels among adult girls with anemia, but Iron supplementation was significantly more effective in producing rapid improvement.
- The findings confirm that mild anemia is common among young women and requires timely nutritional and therapeutic interventions.
- Overall, the study establishes that Iron supplementation is the most effective method for rapid improvement of hemoglobin, while Ragi ball serves as a supportive nutritional intervention for long-term maintenance of healthy haemoglobin levels among adult girls.

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## **EFFECTIVENESS OF A HOME CARE INSTRUCTIONAL MANUAL ON KNOWLEDGE AND CAREGIVING PRACTICES AMONG CAREGIVERS OF NON-AMBULATORY ELDERLY IN PUDUCHERRY**

**P. Yuvasti**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** In India, care for non-ambulatory elderly individuals is mainly provided by untrained family caregivers, leading to inadequate knowledge and poor quality of care. Educational tools like home-care instructional manuals can help improve caregiver knowledge and practices.

**Aim:** To evaluate the effectiveness of a home-care instructional manual on knowledge among caregivers of non-ambulatory elderly individuals.

**Methods:** A community-based quasi-experimental design was used with 80 participants in both experimental and control groups. The experimental group received a home-care manual and teaching session, while the control group received no intervention. Knowledge was assessed before and after four weeks using a structured questionnaire, and data were analyzed using descriptive and inferential statistics.

**Results:** Post-test results showed a significant increase in knowledge in the experimental group compared to the control group ( $t = 12.478, p < 0.001$ ), while the control group showed minimal improvement.

**Conclusion:** The home-care instructional manual is an effective and low-cost method to improve caregiver knowledge and enhance the quality of care for non-ambulatory elderly individuals.

**Keywords:** Caregivers, Elderly Care, Home-Care Manual, Knowledge.

### **Introduction**

Ageing is a gradual life process marked by biological, psychological, and social changes that increase the risk of disease and loss of independence. The expanding elderly population has placed considerable pressure on health-care systems, especially in developing nations such as India. As emphasized by the World Health Organization, population ageing necessitates a stronger focus on long-term and community-based care. Many older adults become non-ambulatory and rely heavily on family members for their everyday activities. Although primary carers are central to home-based care, they frequently lack sufficient knowledge and practical training

### **Need for the Study**

The global elderly population is rapidly increasing, with those aged 65+ expected to triple by 2050. Many become non-ambulatory and are at risk of complications like pressure injuries and infections. In India, around 27% of older adults have mobility impairments, increasing

reliance on home-based care. In Puducherry, over 35% of elderly receiving home care have mobility limitations, with 15% bedridden. As care is often provided by untrained family members, a structured homecare manual is essential to improve the quality of care for non-ambulatory geriatric clients.

### Statement of the Problem

Effectiveness of homecare manual on knowledge regarding care of non-ambulatory geriatric clients among primary caretakers in Koravallimedu, Puducherry.

### Objectives of the Study

- To assess the knowledge regarding care of non-ambulatory geriatric clients among primary caretakers.
- To evaluate the effectiveness of homecare manual on knowledge regarding the care of non-ambulatory geriatric clients among primary caretakers.
- To associate the selected demographic variables with the knowledge regarding care of non-ambulatory geriatric clients among primary caretakers.

### Operational definitions

- Effectiveness: Improvement in caretakers' knowledge on caring for non-ambulatory geriatric clients.
- Knowledge: Awareness and understanding of care for non-ambulatory geriatric clients.
- Homecare Manual: Printed guide with step-by-step instructions for home-based geriatric care.
- Non-ambulatory Geriatric Clients: Elderly individuals unable to move independently due to illness or disability.
- Primary Caretaker: Person responsible for providing daily care, support, and assistance to such clients.

### Review of literature

Classification	No. of reviews	
	Journals	Webmax
<b>Section A:</b> Studies related to Non-Ambulatory Geriatric Client	5	4
<b>Section B:</b> Study related to challenges and burden of primary caretaker with non -ambulatory geriatric clients.	5	3
<b>Section C:</b> Studies related to effectiveness of educational interventions among primary caretakers of non-ambulatory geriatric clients	5	2
<b>Total</b>	<b>15</b>	<b>9</b>

### **Research methodology**

A quantitative research approach was adopted for this study, utilizing a quasi-experimental research design. The study was conducted in Koravallimedu, Puducherry. The population comprised primary caretakers of non-ambulatory geriatric clients. The sample included primary caretakers of non-ambulatory geriatric clients residing in Koravallimedu, Puducherry. The total sample size consisted of 80 participants, with 40 subjects in the experimental group and 40 subjects in the control group. A non-probability purposive sampling technique was used to select the participants for the study. Data were collected using structured tools, and the findings were analyzed and interpreted using appropriate descriptive and inferential statistical methods.

### **Inclusion Criteria**

- Primary caretakers of non-ambulatory geriatric clients
- Both male and female aged 18 years and above
- Caretakers who are available and willing to participate in the study

### **Exclusion Criteria**

- Professional caretakers or healthcare workers
- Primary caretakers who are not willing to participate in the study

### **Description of Tool**

**Section A:** Description of the demographic variables among primary caretakers of non-ambulatory geriatric clients

**Section B:** A self-structured interview questionnaire used to assess caretakers' knowledge in key areas of home-based care among the primary caretakers of non-ambulatory geriatric clients.

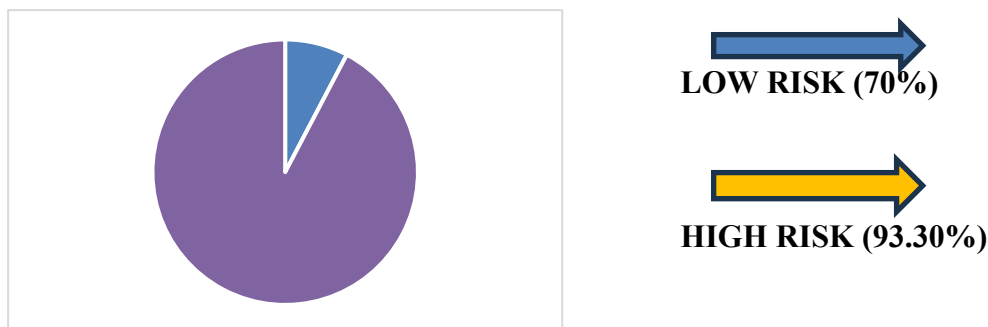
### **Scoring and Interpretation of Knowledge**

<b>Level of knowledge</b>	<b>Range of score</b>
Inadequate knowledge	15
Moderately adequate knowledge	16-23
Adequate knowledge	24-30

### **Description of the intervention**

The homecare manual consists of ten sections covering essential aspects of care for non-ambulatory geriatric clients. It includes personal care in rural community settings, safe mobility and transfer techniques, nutrition and hydration, medication management, wound care, and incontinence care. It also addresses safety and emergency preparedness, provides guidelines for emotional and social support, and includes aspects of palliative care and end-of-life care to ensure comprehensive support for elderly individuals at home.

**Frequency and percentage wise distribution of the risk factor among adolescence with disruptive mood dysregulation disorder**



**Effectiveness of homecare manual on level of knowledge among primary caretakers of non-ambulatory geriatric clients.**

Level	Pre-Test knowledge				Post-Test Knowledge			
	Group	Mean	SD	T-Test	P-Value	Mean	SD	T-Test
Experimental	9.12	3.74	0.088	0.93	21.65	4.45	12.478	<0.001
Control	9.2	3.86			9.52	4.24		

**Association between the level of knowledge among primary caretakers of non-ambulatory geriatric client with their selected demographic variables**

Demographic Variable	Test Used (MW)	p-value	Significance
Age	23.957	0.000	Highly Significant
Gender	4.977	0.026	Significant
Relationship to Patient	34.096	0.000	Highly Significant
Educational Qualification	34.096	0.000	Highly Significant
Occupation	23.894	0.000	Highly Significant
Socio-economic Status	2.741	0.254	NS-Not Significant
Duration as Primary caretaker	18.367	0.000	Highly Significant
External Support for Caregiving	6.429	0.040	Significant
Caring Hours per Day	24.234	0.000	Highly Significant
Access to Healthcare Professionals	4.948	0.026	Significant

**Discussion**

**Objective 1: To assess primary caretakers' knowledge on caring for non-ambulatory geriatric clients.**

The experimental group showed a significant improvement in knowledge after receiving the homecare manual, with mean scores increasing from 9.12 to 21.65 ( $p < 0.001$ ), while the control

group showed no significant change. This confirms the effectiveness of the manual; hence, H<sub>1</sub> was accepted.

**Objective 2: To evaluate the effectiveness of homecare manual on knowledge regarding care of non-ambulatory geriatric clients among primary caretakers.**

Post-test results indicated a significant increase in knowledge in the experimental group ( $21.65 \pm 4.45$ ), with a paired *t*-test value of 12.478 ( $p < 0.001$ ), confirming the effectiveness of the homecare manual. The control group showed no notable improvement, supporting the intervention’s impact.

**Objective 3: To associate the selected demographic variables with the knowledge regarding care of non-ambulatory geriatric clients among primary caretakers.**

Significant associations were found between pre-test knowledge and variables such as educational status, prior caregiving experience, and relationship to the client ( $p < 0.05$ ). Therefore, H<sub>2</sub> was accepted.

**Implications of the Study**

The study's findings have implications for nursing practice, nursing education, nursing administration, and nursing research.

**Nursing Practice**

- Nurses can use the homecare manual to educate caretakers of non-ambulatory geriatric.
- Enhancing caretaker knowledge can prevent issues such as pressure ulcers and infections, resulting in improved patient outcomes

**Nursing Education**

- Incorporating caretaker education in the nursing curriculum can promote family-centered care.
- Community health nursing students should be trained to educate caretakers using similar manuals

**Nursing Administration**

- Nursing administrators can implement structured caretaker education programs at PHCs and CHCs.
- Policies can be framed to integrate caretaker education as a regular part of home visits by community health nurses

**Recommendations**

- Develop mobile-based educational tools or apps for caretakers to make learning more accessible.
- Longitudinal studies can be conducted to assess retention of knowledge and long-term impact of caretaker education

## Summary

This study, titled "Effectiveness of Homecare Manual on Knowledge Regarding Care of Non-Ambulatory Geriatric Clients among Primary Caretakers," aimed to assess and improve caretaker knowledge. Using a quasi-experimental pre-test/post-test control group design, 80 primary caretakers from Koravallimedu, Puducherry (40 in each group) were selected through purposive sampling. Data were collected via a self-structured interview questionnaire. The experimental group received a homecare manual after the pre-test, followed by a post-test after 4 weeks. Statistical analysis showed a significant improvement in knowledge scores in the experimental group, confirming the manual's effectiveness.

## Conclusion

The study findings confirm that a structured homecare manual effectively improves primary caretakers' knowledge in managing non-ambulatory geriatric clients. caretaker education is essential, especially in home settings with limited professional support

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## **A STUDY TO EVALUATE THE EFFECTIVENESS OF HAND EXERCISE USING A RUBBER BALL ON HAND GRIP STRENGTH AND PSYCHOLOGICAL WELL-BEING AMONG ELDERLY AT SELECTED AREAS OF PUDUCHERRY**

**S. Padmavathy**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** Aging leads to reduced physical strength and psychological well-being, affecting the quality of life of elderly individuals. Simple interventions like rubber ball hand exercises may help improve both physical and mental health. **Aim:** To assess the effectiveness of rubber ball hand exercises on hand grip strength and psychological well-being among elderly individuals.

**Methods:** A quasi-experimental pre-test post-test control group design was used. Seventy elderly participants were selected using convenience sampling and divided into experimental and control groups. Hand grip strength was measured using a dynamometer, and psychological well-being was assessed using a standardized scale. The experimental group performed rubber ball exercises daily for two weeks, while the control group received routine care.

**Results:** The experimental group showed a significant improvement in hand grip strength and psychological well-being compared to the control group ( $p = 0.001$ ).

**Conclusion:** Rubber ball hand exercises are a simple, cost-effective intervention to improve physical strength and psychological well-being among the elderly.

**Keywords:** Elderly, Hand Grip Strength, Psychological Well-Being, Rubber Ball Exercise.

### **Introduction**

Aging is a natural and continuous biological process that involves gradual changes in the body's structure and function over time, leading to a decline in physical and sometimes mental capabilities. According to WHO (World Health Organization) people aged 60 years and above are generally considered older adults or elderly. In many developed countries, the threshold is 65 years and above (based on retirement norms). Psychological well-being was defined as one's level of happiness/health, encompassing life satisfaction and a feeling of accomplishment. A significant proportion 14% of adults over 60 years of age were impacted by mental health disorders.

### **Need for the Study**

Aging is a growing global concern. According to the World Health Organization, the global population aged 60 years and above is projected to double, reaching 2.1 billion by 2050. With advancing age, elderly individuals often experience a decline in physical functions, particularly in hand grip strength (HGS), which is a key indicator of overall muscular strength and functionality.

Research has shown that reduced HGS is associated with an increased risk of falls, disability, hospitalization, and mortality.

### **Statement of the Problem**

A study to evaluate the effectiveness of hand exercise using a rubber ball on hand grip strength and psychological well-being among elderly at selected areas of Puducherry.

### **Objectives**

- To assess the existing level of hand grip strength, psychological well-being among elderly in experimental group and control group
- To evaluate the effectiveness of hand exercise using a rubber ball on hand grip strength and psychological well-being among elderly in experimental group and control group
- To correlate the post-test level of hand grip strength with psychological well-being among elderly in both the groups
- To associate the post-test level of hand grip strength and psychological well-being among elderly with selected demographic variables

### **Operational Definition**

- **Effectiveness** refers to changes in the level of hand grip strength and psychological well-being among elderly after the hand exercise using a rubber ball
- **Hand grip strength** refers to outcome of muscle strength maximum force generated experienced by elderly evaluated by Janner dynamometer.
- **Psychological well-being:** refers to change in satisfaction of life, quality of being efficient, sociability, mental health and interpersonal relations among elderly and assessed by Sisodia and Chowdhury psychological well-being scale
- **Elderly** refers to the individual age between 60 to 80 years of age include both male and female.

### **Hypotheses**

- **H<sub>1</sub>**-There is a significant difference between the pre and post-test level of hand grip strength and psychological well-being in experimental group and control group
- **H<sub>2</sub>**- There is a significant correlation in the post test level of hand grip strength with psychological well-being among elderly
- **H<sub>3</sub>**- There is a significant association between the post test level of hand grip strength and psychological well-being with selected demographic variables.

### **Review of literature**

**Section-A:** Reviews related to problems faced by elderly.

**Section-B:** Reviews related to Hand grip strength and Jammer dynamometer

**Section-C:** Reviews related to psychological well-being among elderly

**Section-D:** Reviews related to hand exercise using ball on hand grip strength and psychological well-being

**Research Methodology**

The present study adopted a quantitative research approach with a pre-test and post-test control group design. The study was conducted in Muthialpet, Puducherry, among elderly individuals aged between 60 and 80 years. The target population consisted of all elderly persons residing in the selected area, and those who met the inclusion criteria were included as the sample. A total sample size of 70 participants was selected, with 35 participants allocated to the experimental group and 35 to the control group using a convenience sampling technique.

**Data Collection Procedure**

Data collection was carried out in a structured manner. Initially, a pre-test assessment was conducted for both experimental and control groups to evaluate hand grip strength and psychological well-being. Following this, the experimental group received the intervention, which consisted of hand exercises using a rubber ball for a duration of two weeks, while the control group continued with routine care without any intervention. After the completion of the intervention period, a post-test assessment was conducted for both groups using the same tools. Hand grip strength was measured using a Jamar dynamometer, and psychological well-being was assessed using the Sisodia and Chowdhury psychological well-being scale. The collected data were then systematically analyzed to determine the effectiveness of the intervention.

**Sample Size Determination**

**Sample size was calculated by power analysis**

Sample Size for Comparing Two Means			
Input Data			
Confidence Interval (2-sided)	95%		
Power	80%		
Ratio of sample size (Group 2/Group 1)	1		
	Group1	Group 2	Difference*
Mean	25.8	19.87	5.93
Standard deviation	10.24	6.08	
Variance	104.858	36.9664	
Sample size of Group 1			32
Sample size of Group 2			32
Total sample size			64

Considering an estimated attrition rate of 10% the sample size was rounded up to 70 participants, with 35 allocated to the experimental group (n=35) and 35 to the control group (n=35).

### Sampling criteria

#### Inclusion Criteria

- Age between 60 – 80 years of age
- Male, female, transgender
- Able to read and understand Tamil
- Able to perform activities of daily living independently
- Elderly individual whose hand grip strength is less than 30 kg indicating of mild, moderate, severe weakness score.

#### Exclusion Criteria

- The participants with normal and very severe hand grip strength score
- History of mental disorder
- Physically challenged individual
- Severe arthritis and Upper limb pain

### Description and Intervention

Neural disease inhibiting passive exercises

#### Pre-preparation:

The participants were seated in an upright and comfortable position on a chair facing table.

#### Step 1: (pre-test)

For all participants, the hand grip strength was assessed by using Jammer dynamometer and psychological well-being was assessed using Sisodia and Chowdhury psychological well-being scale before initiation of intervention in both groups.

#### Step 2: Hand exercise using a rubber ball

Hand exercise using a rubber ball was given to the all the participant in experimental group for 2 times a day (morning and evening) for 2 weeks. It consists of 8 techniques.

#### Techniques of hand exercise using a rubber ball

Steps	Procedure- Hand Exercise Using a Rubber Ball
1. Ball grip (wrist up)	<ul style="list-style-type: none"><li>• Grip ball was kept in the palm.</li><li>• Turn hand but so it faces up.</li><li>• Squeeze the ball with your palm Hold &amp; relax. Continue for 3 minutes</li></ul>
2. Ball grip (wrist down)	<ul style="list-style-type: none"><li>• Instruct the participant place the grip ball in palm.</li><li>• Turn hand in so faces down.</li><li>• Squeeze the ball in the palm.</li></ul>

<b>3. Pinch</b>	<ul style="list-style-type: none"> <li>Place ball between the thumb and index finger.</li> <li>Squeeze together. Hold and relax, Continue for 3 minutes</li> </ul>
<b>4.Thumb extend</b>	<ul style="list-style-type: none"> <li>Place ball between bent thumb and two fingers of the same hand.</li> <li>Rolling the ball, extend and straighten the thumb. Continue for 3 minutes</li> </ul>
<b>5.Opposition</b>	<ul style="list-style-type: none"> <li>Place ball in the palm of the hand. Keep between thumb and finger being exercised, Squeeze thumb and finger together.</li> <li>Hold and relax hand. Continue for 3 minutes</li> </ul>
<b>6.Extend out</b>	<ul style="list-style-type: none"> <li>Place the ball on a table, Put tips of fingers on the ball.</li> <li>Roll the ball outwards on the table. Continue for 3 minutes</li> </ul>
<b>7.Side Squeeze</b>	<ul style="list-style-type: none"> <li>Place ball between any two fingers.</li> </ul>
<b>8.Finger bend</b>	<ul style="list-style-type: none"> <li>Squeeze the two fingers together. Hold and relax. Continue for 3 minutes</li> <li>Place the ball in the palm of the hand with fingers pressed into the ball fingers into the ball as if you are bending your fingers.</li> <li>Hold and then relax. Continue for 3 minutes.</li> </ul>

### Step 3: (Post test)

Hand exercise using a rubber ball was given for 2 weeks to experimental group and control group participant underwent routine daily care. After 2 weeks, for all the participants the hand grip strength was assessed by using Jammer dynamometer and psychological well-being was assessed by using Sisodia and Chowdhury scale in both the groups.

### Description of Tool

The tool consists of three sections

Section	Variables	Description
<b>Section A</b>	Demographic variables	A structured questionnaire consisting of age, gender, education, occupation, type of job, habit of alcoholism, habit of smoking, dominant hand.
<b>Section B</b>	Jammer dynamometer - hand grip strength assessment scale	Grip strength was assessed by using the jammar dynamometer on both dominant and non-dominant hand (american society of hand therapist)
<b>Section C</b>	Sisodia and chowdhury psychological well-being scale	Satisfaction of life, quality of being efficient, sociability, mental health and interpersonal relations

**Section B-Tool for assessment of Hand grip strength by Jammer dynamometer**  
**Grip Strength Assessment Using the Jammar Dynamometer Both Dominant And Non-dominant Hand**  
**(American Society of Hand Therapist)**

Steps	Procedure
1.position the patient's hand:	Have the patient sit with their arm at their side, elbow at 90 degrees, and forearm in a neutral position.
2.place the dynamometer in the patient's hand:	Position the dynamometer in the patient's hand, ensuring the grip is in the correct position and the handle is parallel to the floor.
3.instruct the patient to squeeze	Ask the patient to squeeze the dynamometer as hard as possible for 2-3 seconds.
4.record the reading	Take note of the maximum reading on the dial.
5.perform two to three trials	Taking the average of the readings.

Hand grip strength Classification	Interpretation
≥ 30 kg	Normal
24-29 kg	Mild weakness
18-23 kg	Moderate weakness
12-17 kg	Severe weakness
< 12 kg	Very severe weakness

**Section C: Psychological Well-being Scale (Sisodia & Choudhary Scale)**

After 2 weeks

The tool consists of 50 statements each statement was scored as 5-point Likert scale

Response	Score
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

**Scoring Interpretation**

Score range	Level of Psychological Well – being
10-<12	Very Low
12-<16	Low
16 - < 43	Moderate
43 - < 48	High
48 - 50	Very High

## Interpretation and Analysis

### Section A: Description of the Demographic Variables of the Elderly

**Table 1: Frequency and percentage distribution of the demographic variables of the elderly**

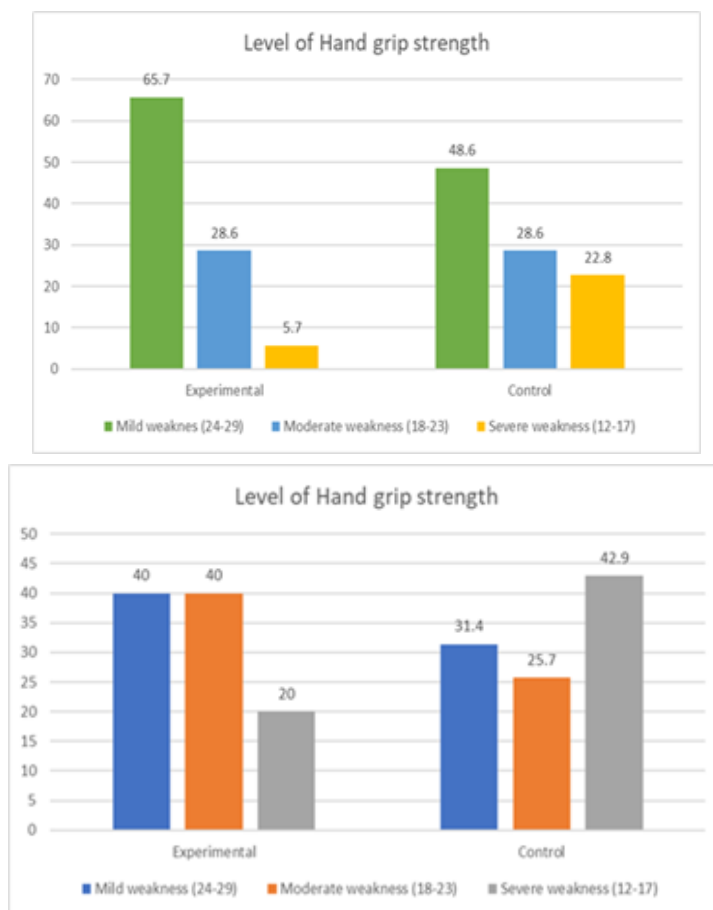
**N=70(35+35)**

Demographic Variables	Experimental Group		Control Group		Chi-Square for homogeneity
	f	%	f	%	
Age in years					$\chi^2=3.019$
60 – 69	20	57.1	13	37.1	p=0.221
70 – 79	10	28.8	13	37.1	N.S
80+	5	14.3	9	25.7	
Gender					$\chi^2=0.530$
Male	13	37.1	16	45.7	p=0.467
Female	22	62.9	19	54.3	N.S
Education					$\chi^2=5.558$
No formal education	15	42.9	14	40.0	p=0.135
Primary	9	25.7	9	25.7	N.S
Higher secondary	2	5.7	8	22.9	
Graduate	9	25.7	4	11.4	
Occupation					$\chi^2=2.292$
Unemployed	15	42.9	21	60.0	p=0.514
Business	2	5.7	2	5.7	N.S
Govt./Private sector	11	31.4	8	22.9	
Others (Farmer and Coolie)	7	20.0	4	11.4	
Type of job					$\chi^2=3.054$
Sedentary	11	31.4	11	31.4	p=0.383
Light work	16	45.7	13	37.1	N.S
Moderate work	7	20.0	6	17.1	
Heavy work	1	2.9	5	14.3	
Habit of alcoholism					$\chi^2=2.885$
Yes	11	31.4	18	51.4	p=0.089
No	24	68.6	17	48.6	N.S
Habit of smoking					$\chi^2=4.242$
Yes	7	20.0	15	42.9	p=0.039 S*
No	28	80.0	20	57.1	

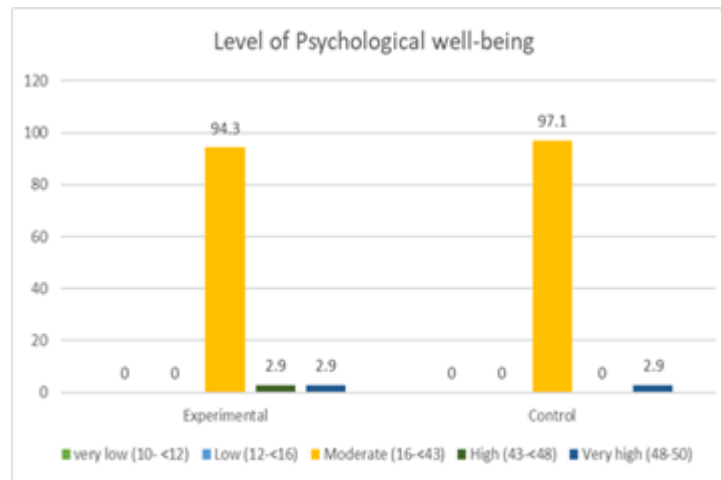
Dominant hand					$\chi^2=0.000$ $p=1.000$ N.S
Left	6	17.1	6	17.1	
Right	29	82.9	29	82.9	
Both	-	-	-	-	
Marital status					$\chi^2=2.622$ $p=0.454$ N.S
Married	25	71.4	20	57.1	
Unmarried	7	20.0	8	22.9	
Widowed	2	5.7	6	17.1	
Divorced	1	2.9	1	2.9	

Majority of participants were aged 60–79 years. Most were females (Exp: 62.9%, Ctrl: 54.3%), with no formal education (Exp: 42.9%, Ctrl: 40%), and unemployed (Exp: 42.9%, Ctrl: 60%). Majority did not smoke (Exp: 80%, Ctrl: 57.1%), had both hands dominant (82.9%), and were married (Exp: 71.4%, Ctrl: 57.1%).

### Section-B



**Figure 1 and 2: Existing level of hand grip strength, psychological well-being among elderly in experimental group and control group N= 70(35+35)**



**Figure 3: Existing level of psychological well-being in both groups N = 70(35+35)**

Waering *J et al.* reported a significant age-related decline in handgrip strength among adults aged 75 years and above, with men showing higher values and many at risk of mobility limitations. Similarly, Priyanka Beniwal *et al.* found that most senior citizens had moderate psychological well-being. Male seniors demonstrated significantly better overall psychological well-being than females.

**Section C:**

**Table 2: Effectiveness of Hand Exercise using a Rubber Ball on hand grip strength (right) among elderly between the experimental and control group.N= 70(35+35)**

Hand Grip Strength (Right)	Pretest		Post Test		Mean Difference Score	Paired “t” & p-Value
	Mean	S.D	Mean	S.D		
Experimental Group	27.0	6.39	35.88	7.17	8.88	t= 19.482 p=0.0001, S***
Control Group	25.28	10.37	26.28	10.79	1.0	t= 0.910 p=0.369, N.S

**Table 3: Effectiveness of Hand Exercise using a Rubber Ball on hand grip strength (left) among elderly between the experimental and control group.N= 70(35+35)**

Group	Pretest Mean	Pretest SD	Post Test Mean	Post Test SD	Mean Difference	t-value	p-value	Significance
Experimental Group	23.40	8.69	31.51	7.70	8.11	17.863	0.0001	Significant (***)
Control Group	20.63	8.51	20.83	8.38	0.20	0.344	0.733	Not Significant

**Table 4: Effectiveness of hand exercise using a rubber ball on hand grip strength and psychological well-being among elderly in the experimental and control group.N= 70(35+35)**

Psychological well-being	Pretest		Post Test		Mean Difference Score	Paired “t” & p-Value
	Mean	S.D	Mean	S.D		
Experimental Group	33.37	6.62	42.63	5.30	9.26	t= 9.357 p=0.0001, S***
Control Group	30.60	6.06	30.86	5.93	0.26	t= 0.584 p=0.563, N.S

The above findings were supported by the study findings conducted by Rahmawati *et al.* (2021), who found significant improvement in grip strength post-exercise (p=0.000). Hence *H1* was accepted.

#### Section D:

The above findings were supported by the study findings conducted by Stoffer-Marx *et al.*(2018) found that functional exercises significantly improved grip strength in hand OA patients (p=0.001), supporting the effectiveness of such interventions. Hence, **H2** was accepted.

The demographic variables age ( $\chi^2=12.727$ , **p=0.0.13**) and habit of smoking ( $\chi^2=8.485$ , **p=0.014**) had statistically significant association with post test level of Hand Grip Strength (Right) among elderly at p<0.05 level in the experimental group.

The above findings were supported by the study findings conducted by Chang *et al.* (2022) found a significant association between hand grip strength and cognitive function in older adults suggesting HGS as a marker for cognitive health. Hence, **H3** was accepted.

#### Conclusion

This study concludes that hand exercise using a rubber ball is a simple, low- cost, and highly effective intervention to: Improve hand grip strength, promoting better physical functioning and independence. Enhance psychological well-being, reducing emotional distress and promoting life satisfaction among the elderly. The findings highlight the potential for non-pharmacological, community-based strategies to improve elderly care in resource-limited settings. Given its accessibility and ease of practice, the rubber ball hand exercise can be widely recommended as part of routine geriatric wellness programs.

#### Nursing implication

##### Nursing Service

- Community health nurses, home care providers, and staff in old age homes can implement rubber ball exercises in both individual and group settings.
- These exercises help improve physical strength and enhance psychological well-being among elderly individuals.

### **Nursing Education**

- Nursing curricula should include structured training on geriatric rehabilitation techniques.
- Simple and low-cost interventions like rubber ball exercises should be emphasized for easy application in community and clinical settings.
- Educating nursing students on the benefits of improving hand grip strength and psychological well-being can promote self-care and preventive practices among elderly clients.

### **Nursing Research**

- Future research can focus on the long-term effects of hand exercises.
- Studies can explore their impact on cognitive function, self-esteem, social engagement, and overall quality of life.

### **Nursing Administration**

Nursing administrators should integrate rubber ball exercises into routine geriatric care by developing standard protocols and ensuring adequate staffing and resources. They should also provide training for nursing staff, promote collaboration with other healthcare professionals, and regularly monitor and evaluate patient outcomes while maintaining proper documentation.

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# **A STUDY TO ASSESS THE EFFECTIVENESS OF LOGO THERAPY AMONG CLIENTS WITH FUNCTIONAL IMPAIRMENT ADMITTED IN PSYCHIATRIC WARD AT SMVMCH, PUDUCHERRY**

**Sandhiya. V**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

**Background:** Functional impairment is common among psychiatric patients and affects their independence and quality of life. Logotherapy, which focuses on finding meaning and purpose in life, may help improve psychological functioning.

**Aim:** To assess the effectiveness of logotherapy among clients with functional impairment.

**Methods:** A pre-experimental one-group pretest-posttest design was used. Sixty psychiatric patients were selected using purposive sampling. Functional status was assessed using the FAST tool before and after administering logotherapy. Data were analyzed using descriptive and inferential statistics.

**Results:** Posttest results showed improvement in functional levels, with a reduction in severe impairment. However, no significant association was found with demographic variables.

**Conclusion:** Although some improvement was observed, logotherapy was not significantly effective in reducing functional impairment. Further research with larger samples and control groups is recommended.

**Keywords:** Functional Impairment, Logotherapy, Psychiatric Patients, FAST Scale, Pre-Experimental Study.

## **Introduction**

Functional impairment refers to a reduction in an individual's ability to perform normal physical, cognitive, or emotional functions, ranging from mild limitations to complete disability. Logotherapy, derived from the Greek word "logos" meaning "purpose" or "meaning," is a therapeutic approach developed by Viktor Frankl. It focuses on the idea that human beings are motivated by a "will to meaning," or the desire to find purpose in life. As a form of existential psychotherapy, logotherapy emphasizes the spiritual dimension of human existence and views suffering as an integral part of life, encouraging individuals to find meaning even in difficult circumstances. The following tenets represent the basic principles of logotherapy.

## **Need for the Study**

Mental health disorders are a major global concern, affecting nearly 1 in 8 individuals, with over 197 million people impacted in India alone. Depression and anxiety are most common, yet a large

treatment gap (70–92%) persists due to limited access and stigma. Psychiatric conditions often lead to functional impairment, affecting daily activities and quality of life. In Puducherry, higher rates of psychiatric morbidity and suicide highlight the need for improved care beyond pharmacological treatment. Logotherapy, developed by Viktor Frankl, has shown effectiveness in improving psychological well-being and functional outcomes. However, its use in acute psychiatric inpatient settings in India is limited. Therefore, this study aims to evaluate the effectiveness of logotherapy among psychiatric inpatients with functional impairment at SMVMCH, providing evidence for integrating this approach into mental health care.

### **Statement of the Problem**

A study to assess the effectiveness of logo therapy among clients with functional impairment admitted in psychiatric ward at SMVMCH, Puducherry.

### **Objectives of the Study**

- To assess the level of functional impairment among clients admitted to psychiatric ward
- To evaluate the effectiveness of logo therapy in improving functional outcomes among clients with functional impairment admitted to psychiatric ward.
- To associate the level of functional impairment with their selected demographic variables among clients in the psychiatric ward.

### **Operational definitions**

- Effectiveness: Measurable improvement in well-being, meaning in life, and coping ability after logotherapy, assessed using pre- and post-test scores.
- Logotherapy: A meaning-centered psychotherapy based on Viktor Frankl, using techniques like dereflection, paradoxical intention, and Socratic dialogue.
- Functional Impairment Clients: Individuals with limitations in daily activities due to physical, cognitive, emotional, or psychiatric conditions, admitted to the psychiatric ward.
- Psychiatric Ward: A specialized unit at SMVMCH, Puducherry, for treatment and management of patients with mental illness.

### **Hypotheses:**

There is a significant association between the level of functional impairment and selected demographic variables among clients in the psychiatric ward

### **Review of Literature**

Sections	Review title	No. of Reviews
A	Review related to functional impairment.	08
B	Review related to logotherapy	07
C	Review related to effectiveness of logotherapy among Functional impairment.	07
Total		22

## **Research Methodology**

A quantitative research approach was adopted for the present study. A pre-experimental research design with one group pre-test and post-test was used. The study was conducted at SMVMCH, a well-equipped multi-speciality hospital with a psychiatric ward consisting of 30 beds for male and female patients separately, and an outpatient department where more than 30 patients visit daily. The population included all patients with functional impairment. The independent variable in this study was logotherapy, and the dependent variable was functional impairment. The sample comprised psychiatric patients with functional impairment who met the inclusion criteria. A non-probability purposive sampling technique was used to select the participants. The total sample size for the study was 60 patients with functional impairment.

### **Criteria for sample selection**

#### **Inclusion Criteria**

- Patients admitted in SMVMCH
- Both male and female psychiatric patients with functional impairment
- Patients aged between 20–70 years with functional impairment

#### **Exclusion Criteria**

- Patients who have already participated in a similar type of study
- Patients who are unable to understand the local language (Tamil)

#### **Ethical consideration**

- The Research Proposal was approved by the experts prior to the permission of pilot study and main study will be obtained from the institutional ethical committee in SMVMCH.
- Written informed consent was obtained from the study participants of deaddiction centers. The subjects involved in the study was explained clearly regarding purpose and objectives of the study. The subjects selected for the study was assured about the confidentiality of the information provided by the researcher.
- It was ensured that a prescribed intervention will not affect the regular schedule of the functional impairment clients.

#### **Pilot Study**

A pilot study was conducted among 6 functional impairment clients at FLSH over one week to assess the feasibility and practicability of the study. Pretest assessment was done using a functional impairment tool along with demographic variables, followed by administration of logotherapy. After one week of intervention, a post-test was conducted to evaluate changes in functional level.

**Description of the Tools**

**Section A: Demographic variables:** Age, Gender, Religion, Residence, Family Monthly Income, Socioeconomic Status, Occupation, Educational Status, Marital Status, Type of Marriage, Number of Children, Family History of Psychiatric Illness.

**Section B:** This section consists of Functional Assessment Short Test (FAST) tool for adult to assess the functional impairment

**Scoring Interpretation**

**Section A: Demographic variables:** Age, Gender, Religion, Residence, Family Monthly Income, Socioeconomic Status, Occupation, Educational Status, Marital Status, Type of Marriage, Number of Children, Family History of Psychiatric Illness.

**Section B:** This section consists of Functional Assessment Short Test (FAST) tool for adult to assess the functional impairment

**Scoring Interpretation**

<b>Interpretation</b>	<b>Score</b>
Good functioning	0-20
Moderate functional impairment	21-40
Severe functional impairment	41-72

**Data Collection Procedure**

Formal permission was obtained prior to the study. Informed consent was taken from the caregivers of clients with functional impairment. Participants were selected using a purposive sampling technique, and a total of 60 clients with functional impairment and mental disorders were included in the study. Demographic data were collected from the participants. A pre-test was conducted using the Functional Assessment Short Test (FAST) questionnaire. Following this, logotherapy was administered to all participants. After the intervention, a post-test was conducted using the same tool. Confidentiality of the information was maintained throughout the study.

**Analysis and Interpretation of Data**

<b>Section A:</b>	Description of the demographic variables of the Functional impairment clients.
<b>Section B:</b>	Description of level of functional impairment among psychiatric Patients
<b>Section C:</b>	Association between the level of functional impairment with mental disorder clients with the selected demographic variables

### Section A: Description of the demographic variables of the clients

S. No	Demographic Variables	Majority of Samples
1	Age	46 – 55 Years 36.7%
2	Gender	Female 56.7%
3	Religion	Hindu 98.3%
4	Residence	Rural areas 76.7%
5	Family Monthly Income	Between Rs:11000 to 20000 - 50%
6	Socioeconomic Status	Middle Class 98.3%
7	Occupation	Unemployed 71.7
8	Educational Status	Primary education 50%
9	Marital Status	Married 88.3%
10	Type of Marriage	More than 2 - 65%
11	Number of Children	5-6 times per day (40%)
12	Family History of Psychiatric Illness	No - 71.7%

### Section B: Frequency and percentage wise distribution of level of functional impairment in pretest and posttest among functional impairment patients

S. No	Level of Functioning	Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
		(N)	(%)	(N)	(%)
		f	%	f	%
1.	Good functioning	0	0	2	3.3
2.	Moderate functional impairment	11	18.3	58	96.7
3.	Severe function impairment	49	81.7	0	0

Before the intervention, a majority of participants (81.7%) exhibited severe functional impairment, and 18.3% showed moderate function, and none demonstrated good function. Following the intervention, there was a marked improvement in functional status — 96.7% of participants attained moderate function, and 3.3% achieved good function, with no participants remaining in the severe category. Overall, the results indicate a substantial improvement in functional ability among participants after the intervention, reflecting its positive impact on daily functioning.

### Section C: Association between the level of functional impairment among functional Impairment patients with their selected demographic variables

No statistically significant association was found between demographic variables and functional status ( $p > 0.05$ ). However, a relatively higher proportion of moderate function was observed

among participants aged 46–55 years, females, Hindus, and those from rural areas. Similarly, participants from the middle socioeconomic class, the unemployed group, and those with secondary education showed comparatively better moderate functional levels. Variables such as marital status, type of marriage, number of children, and family history of psychiatric illness were not associated with functional status.

### **Major Findings of the Study**

In the pretest, none of the 60 participants had good functioning; 11 (18.3%) had moderate functional impairment and 49 (81.7%) had severe impairment. In the post-test, improvement was observed, with 2 (3.3%) achieving good functioning and 58 (96.7%) showing moderate impairment, while none remained in the severe category. The mean post-test score was  $29.82 \pm 3.72$ , indicating that logotherapy was effective in improving functional status among clients with functional impairment.

### **Implications of the Study**

**Nursing Practice:** The study findings help the nurse to practice logotherapy in clinical area and help to reduce the functional impairment of psychiatric client got admitted at psychiatric ward. Nurses can be motivated their life through practicing logo therapy.

**Nursing Education:** in nursing education to organize continuing nursing education programme, conference, workshop regarding logotherapy to improve functional impairment among psychiatric patient.

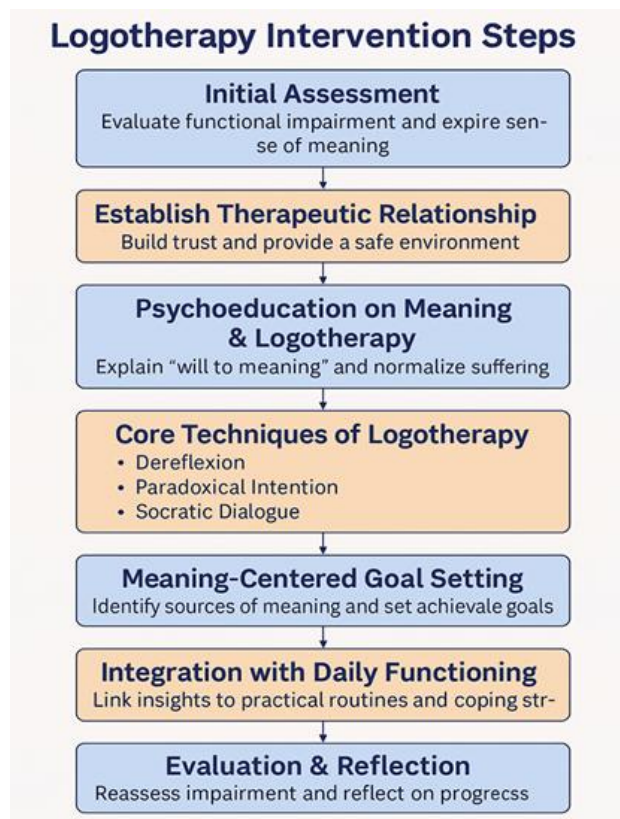
**Nursing Administration:** nursing administrator can make necessary policies to implement in nursing care services of patients with functional impairment.

### **Recommendations**

- Similar study can be conducted in large samples.
- The sample study can be conducted in different settings.
- Similar study can be conducted for assessing effectiveness of logotherapy among severe functional impairment patients.
- The study can be implemented in various states of India.

### **Conclusion**

The study concluded that logotherapy was effective in improving functional status among clients with functional impairment. Participants showed a marked shift from severe to moderate levels of impairment, with some achieving good functioning after the intervention. Although demographic variables did not show significant associations with functional outcomes, the overall improvement indicates that logotherapy is a beneficial, feasible, and supportive intervention for enhancing functioning and well-being among psychiatric inpatients.



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## **A STUDY TO EVALUATE THE EFFECTIVENESS OF PSYCHOSOCIAL INTERVENTION REGARDING DE-ESCALATION TECHNIQUE FOR MANAGEMENT OF AGGRESSION AMONG ALCOHOLIC CLIENTS IN SELECTED DE-ADDICTION CENTERS AT PUDUCHERRY**

**V. Vishva**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** Alcohol-related aggression is a major issue in de-addiction centers, affecting safety and treatment outcomes. De-escalation techniques, as a psychosocial intervention, may help manage aggression by improving emotional control and coping skills.

**Aim:** To evaluate the effectiveness of psychosocial intervention using de-escalation techniques in managing aggression among alcoholic clients.

**Methods:** A quasi-experimental design was used with 100 alcoholic clients selected through purposive sampling and divided into interventional and control groups. Aggression levels were assessed using the Buss-Perry Aggression Questionnaire before and after the intervention. Data were analyzed using descriptive and inferential statistics.

**Results:** The interventional group showed a significant reduction in aggression levels compared to the control group, with a greater decrease in mean aggression scores ( $p < 0.000$ ). No significant association was found with demographic variables.

**Conclusion:** Psychosocial intervention using de-escalation techniques is effective in reducing aggression among alcoholic clients and can improve safety and treatment outcomes in de-addiction settings.

**Keywords:** Psychosocial Intervention, De-Escalation Techniques, Aggression, Alcohol Dependence, Quasi-Experimental Study.

### **Introduction**

Mental health is a vital component of overall well-being, influencing how individuals think, feel, and behave in daily life. Mental illnesses can impair functioning across personal, social, and occupational domains and arise from multiple biological and environmental factors. Among emotional responses, anger is a natural feeling, whereas aggression involves harmful behaviors that may be physical, verbal, or indirect. Alcohol abuse is closely linked to increased aggression due to its impact on impulse control and emotional regulation.

Aggression is particularly common among individuals undergoing treatment for alcohol dependence, especially in de-addiction settings, where withdrawal symptoms such as irritability and agitation further contribute to aggressive behavior. This poses risks to patients and healthcare providers, making effective management essential. Globally, alcohol use is associated with

significant mortality and violence, with a considerable proportion of aggressive incidents occurring under its influence.

Psychosocial interventions, especially de-escalation techniques such as active listening, empathy, and calm communication, have proven effective in reducing aggression and improving safety in healthcare environments. In India, including regions like Tamil Nadu and Puducherry, alcohol-related aggression is a growing concern, emphasizing the need for structured interventions to manage and prevent aggressive behavior in de-addiction centers.

### **Need for the Study**

Globally, alcohol-related aggression is a major concern, with the World Health Organization reporting nearly 3 million deaths annually, many linked to violence. About 40% of violent crimes and 20–30% of emergency incidents involve alcohol, and 15–45% of patients in de-addiction centers show aggression. De-escalation techniques can reduce such incidents by 30–50%. In India, around 30% of adults consume alcohol, with significant links to violence; studies by National Institute of Mental Health and Neurosciences report alcohol-related violence in 20–30% of affected households. Regional data from Tamil Nadu and Puducherry further highlight high levels of alcohol-related aggression, emphasizing the need for psychosocial interventions like de-escalation techniques in de-addiction settings.

### **Statement of the Problem**

A study to evaluate the effectiveness of psychosocial intervention regarding de-escalation technique for management of aggression among alcoholic clients in selected deaddiction centers at Puducherry

### **Objectives**

- To assess the level of aggression among alcoholic clients in selected de-addiction centers.
- To evaluate the effectiveness of de-escalation technique in management of aggression among alcoholic clients.
- To find out the association between the pre intervention level of aggression with their selected demographic variables of alcoholic clients.

### **Research Methodology**

The study adopted a quantitative approach to evaluate the effectiveness of psychosocial intervention using de-escalation techniques in managing aggression among alcoholic clients. A quasi-experimental design with a control group was used, and the study was conducted in selected de-addiction centers in Puducherry. A total of 100 participants were selected through purposive sampling, with 50 in the experimental group and 50 in the control group. Participants aged 18–65 years with moderate to severe aggression who were willing to participate were included, while those unable to communicate or physically ill were excluded.

Data were collected using a structured tool comprising demographic variables and the Buss-Perry Aggression Questionnaire to measure aggression levels. The study involved pre-test and post-test phases, where baseline aggression was assessed in both groups. The experimental group received psychosocial intervention through de-escalation techniques—such as relaxation, breathing exercises, emotional regulation, and communication skills—over one month, while the control group received routine care. Post-test assessment was then conducted, and data were analyzed using descriptive and inferential statistics, including paired and unpaired *t*-tests, with  $p < 0.05$  considered statistically significant.

### Criteria for Sample Selection

#### Inclusion Criteria

- Alcoholic clients in selected deaddiction centers in Puducherry.
- Alcoholic clients who given consent to participate in the study.
- Alcoholic clients whose age between 18 – 65 yrs.
- Alcoholic clients those who have moderate and severe level of aggression.

#### Exclusion Criteria

- Alcoholic clients who are not willing to participate in the study.
- Alcoholic clients who are not able to speak and understand Tamil and English.
- Alcoholic clients who are all sick during the day of data collection.

### Development of Data Collection Instruments

The tool was developed and standardized from extensive literature review, internet research, and expert discussion. The tool consists of the two sections.

#### Section A: Demographic Variables

#### Section B: Buss-Perry Aggression Questionnaire

Section A: The demographic variables consist of the age, gender, religion, area of residence marital status, education level, employment status, Income level, family history of alcoholism, medical history, duration of alcohol use and frequency of alcohol consumption, quantity intake of alcohol consumption per day.

Section B: Buss-Perry Aggression Questionnaire consist of 29 items related to different aspects of aggression like physical, verbal, anger and hostility.

#### Scoring Interpretation:

S. No	Interpretation	Score
1.	Low Level Aggression	29 - 69
2.	Moderate Level Aggression	70 - 100
3.	High Level Aggression	101 - 145

### **Data Collection Procedure**

After getting formal permission, the researcher started to collect the data. Informed consent was taken from alcoholic clients in selected de-addiction centers at Puducherry. Using purposive sampling method, the researcher selected alcoholic clients in selected de-addiction centers in Puducherry. The researcher selected 50 clients for interventional group and 50 clients for control group, then demographic information was collected from all 100 samples and pre-test was conducted to all 100 samples for 1 week followed by administering de-escalation technique for 50 clients in interventional group for 1 month and the post-test was conducted for all 100 samples for 1 week. The researcher assured participants that all study information would remain confidential.

### **Plan for Data Analysis**

The collected data was entered into Microsoft Excel (2020) and coded on a coding sheet. Analysis was conducted using SPSS (Statistical Package for Social Sciences) software version 26.0. Demographic variables were expressed as frequency and percentage distributions. The level of significance was analysed using the t-test, and associations will be tested with the chi-square test. Results were considered statistically significant if the p-value was less than 0.05.

### **Results**

The present study was conducted to evaluate the effectiveness of psychosocial intervention using de-escalation techniques in reducing aggression among alcoholic clients. A total of 100 participants were included in the study, with 50 in the experimental group and 50 in the control group.

The pre-test findings revealed that the majority of participants in both groups exhibited moderate to severe levels of aggression. In the experimental group, the mean pre-test aggression score was 94.32 with a standard deviation of 35.74, indicating a high level of aggression prior to the intervention. Similarly, the control group showed a comparable mean pre-test score of 92.10.

Following the implementation of psychosocial intervention for a duration of one month, a marked reduction in aggression levels was observed in the experimental group. The post-test mean score decreased to 58.58 with a standard deviation of 18.82, demonstrating a significant improvement. In contrast, the control group showed only a slight reduction in aggression, with a post-test mean score of 88.45.

The effectiveness of the intervention was statistically tested using a paired t-test. The calculated t-value for the experimental group was 17.194, which was highly significant at  $p < 0.001$  level. This indicates that the psychosocial intervention was highly effective in reducing aggression among alcoholic clients. However, the control group did not show any statistically significant difference between pre-test and post-test scores.

Further analysis using unpaired t-test revealed a significant difference between the experimental and control groups in the post-test scores, confirming the effectiveness of the de-escalation techniques.

**Comparison of the pretest and post-test mean score using paired ‘t’ test in control group (N= 50)**

Level of Aggression		Mean	Mean Difference	Standard Deviation	‘t’ value
Control group	Pre test	93.00	14.180	15.729	t = 10.765 p = 0.000* (S)
	Post test	78.82		20.007	

\*S- Significant p< 0.05

**Comparison of the mean score using unpaired ‘t’ test between the intervention and control group (N= 100)**

Between Groups		Mean	Mean Difference	Standard Deviation	Unpaired ‘t’ value
Intervention group	Pre test	94.32	1.32	16.411	t = 0.411
Control group	Pre test	93.00		15.729	p = 0.682
Intervention group	Post test	58.58	20.24	18.823	t = 5.210
Control group	Post test	78.82		20.007	p = 0.000*

\*S- Significant p< 0.05

**Discussion**

The study concluded that psychosocial intervention using de-escalation techniques was effective in reducing aggression among alcoholic clients. Pre-test findings showed that most participants had moderate to severe aggression, consistent with the effects of alcohol dependence and withdrawal. After the intervention, the experimental group demonstrated a significant reduction in aggression levels, while the control group showed minimal change, confirming the effectiveness of the intervention.

These findings highlight that aggression is influenced not only by biological factors but also by psychological and social aspects. De-escalation techniques help individuals manage emotions, identify triggers, and develop healthier coping strategies. Overall, the study emphasizes the importance of incorporating structured psychosocial interventions alongside routine care to improve treatment outcomes and ensure a safer environment in de-addiction centers.

**Conclusion**

The study concluded that the intervention group exhibited a much larger and more significant decrease in aggression compared to the control group, as demonstrated by the statistically

significant results. Demographic factors such as age, gender, religion, residence, marital status, educational status, employment status, income level, family history of alcoholism, duration of alcohol use, frequency of alcohol consumption, and quantity of alcohol consumed showed no significant association with aggression levels in either group.

### **Nursing Implications**

The findings of the study on the effectiveness of psychosocial intervention regarding de-escalation techniques for managing aggression among alcoholic clients in selected de-addiction centers at Puducherry have significant implications for nursing practice, nursing education, nursing administration, and nursing research.

### **Nursing Practice**

- The study emphasizes the importance of understanding the emotional and behavioral challenges faced by alcoholic clients, especially in managing aggression.
- Nurses can incorporate de-escalation techniques into daily nursing care may contribute to a safer and more therapeutic environment in de-addiction centers.
- Nurses are positioned to support clients' emotional regulation, which can enhance the effectiveness of addiction recovery programs.

### **Nursing Education**

- Findings highlight the relevance of psychosocial interventions and de-escalation training in nursing curriculum, particularly in the context of substance use disorders.
- Nurse educators can include the de-escalation technique in the nursing curriculum, to enhance the quality life of alcoholic clients and to decrease the aggression level.
- Nurse educators can encourage all the deaddiction centres to assess the aggression level at the time of admission by using this Buss Perry Aggression tool for early identification of level of aggression.

### **Nursing Administration**

- Nurse administrators can organize a CNE, workshop regarding de-escalation techniques for the professionals to handle the alcoholic clients in both clinical and community settings.
- Nurse administrators will make arrangements for providing de-escalation techniques to the patients during their stay in hospital.
- Periodic assessments of nursing staff competencies in managing aggression are beneficial in maintaining care quality and client safety.

### **Nursing Research**

- Future research can be conducted among different population at different settings to make the findings as evidence-based practice.

- Future research can be conducted for nursing students to find the effect of de-escalation technique on their psychological functioning.
- This study merely served as a preliminary investigation for the impact on de-escalation technique on aggression level.
- Future investigations could explore the long term benefits of de-escalation strategies including their role in preventing relapse and improving client mental well-being.

### **Recommendations**

- Similar studies with larger sample sizes should be conducted across different de-addiction centers to generalize the findings and assess the widespread effectiveness of de-escalation techniques.
- Comparative studies between different psychosocial interventions should be conducted to determine the most effective methods for managing aggression in alcoholic clients.
- This study can be done as a mixed method approach.
- The study intervention can also be in the form of bundle of package for the betterment of alcoholic patient to improve their holistic approach.

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# A STUDY TO ASSESS THE QUALITY OF LIFE AND EMOTIONAL STABILITY ON PRIMARY INFERTILITY AMONG WOMEN ATTENDING INFERTILITY CLINIC, AT SMVMCH, PUDUCHERRY

**L. Catherine**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

**Background:** Primary infertility affects women's physical, emotional, and social well-being, often leading to stress, stigma, and reduced quality of life.

**Aim:** To assess the quality of life and emotional stability among women with primary infertility.

**Methods:** A quantitative descriptive design was used among 10 women selected through purposive sampling. Data were collected using the MWHOQOL and Cognitive Emotion Regulation Questionnaire, and analyzed using descriptive and inferential statistics.

**Results:** Most women had moderate quality of life and emotional stability, while some experienced severe impact and low stability. Significant associations were found between quality of life and selected demographic variables ( $p < 0.05$ ).

**Conclusion:** Primary infertility negatively impacts quality of life and emotional stability, highlighting the need for counseling, stress management, and supportive interventions.

**Keywords:** Primary Infertility, Quality of Life, Emotional Stability, Women, Descriptive Study.

## **Introduction**

Primary infertility is defined as the inability to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse. According to the World Health Organization, infertility is a disease of the reproductive system that affects millions of women globally and is considered a significant public health concern. It involves complex biological factors such as hormonal imbalances, ovulatory disorders, tubal blockage, or unexplained causes, and often requires prolonged medical evaluation and treatment. Advances in reproductive technologies have improved the chances of conception; however, access, affordability, and success rates remain variable, particularly in developing regions.

Beyond the physical dimension, primary infertility has profound psychological and social consequences. Women experiencing infertility often face emotional distress, including anxiety, depression, stress, and reduced emotional well-being. Societal expectations and cultural norms that associate womanhood with motherhood can intensify feelings of inadequacy, guilt, and low self-esteem. Additionally, infertility may lead to strained marital relationships, social isolation, and

stigma, further affecting quality of life. The continuous cycle of hope and disappointment during treatment can worsen emotional instability, making it essential to address both the psychological and physical aspects through holistic care, counseling, and support systems.

### **Statement of the Problem**

A study to assess the quality of life and emotional stability on primary infertility among women attending infertility clinic, at SMVMCH, Puducherry

### **Objectives of the Study**

- To assess the quality of life and emotional stability among women with primary infertility
- To compare quality of life and emotional stability
- To associate these variables with selected demographic factors

### **Assumptions**

- Women with primary infertility may have compromised quality of life
- Infertility may lead to emotional distress such as anxiety and depression
- Participants may show varying levels of emotional stability

### **Delimitations**

- Limited to women with primary infertility
- Conducted over a period of one week
- Sample size restricted to 10 participants
- Conducted at infertility clinic, SMVMCH, Puducherry

### **Research Methodology**

A quantitative research approach was adopted for this study, using a descriptive research design. The study was conducted in the infertility clinic at SMVMCH, Puducherry. The population consisted of women with primary infertility. The sample included women who were receiving infertility treatment at the infertility clinic, SMVMCH, Puducherry. A total of 10 women undergoing treatment for primary infertility were selected as the sample. A non-probability purposive sampling technique was used to select the participants for the study.

### **Inclusion Criteria**

- Women diagnosed with primary infertility
- Women who are receiving treatment for infertility
- Women who are willing to participate
- Women who can understand the Tamil language

### **Exclusion Criteria**

- Women who are not receiving treatment for infertility
- Women with psychological disturbances

- Women with medical complications
- Women who cannot understand the Tamil language

### **Tools for Data Collection**

#### **Section A**

Demographic variables

#### **Section B: Modified WHOQOL Questionnaire**

Domains:

- Physical
- Psychological
- Social
- Environmental

#### **Scoring Interpretation:**

Below 35 – Poor Quality of Life

35–65 – Moderate Quality of Life

65–100 – Good Quality of Life

#### **Section C: Cognitive Emotion Regulation Questionnaire (CERQ)**

Includes dimensions such as self-blame, acceptance, rumination, positive refocusing, planning, reappraisal, catastrophizing, and blaming others.

Results

**Table 1: Quality of Life Distribution (N = 10)**

<b>Level of Quality of Life</b>	<b>Frequency</b>	<b>Percentage</b>
Poor	0	0%
Moderate	7	70%
Severe Impact	3	30%

**Table 2: Emotional Stability Distribution (N = 10)**

<b>Level of Emotional Stability</b>	<b>Frequency</b>	<b>Percentage</b>
Low	3	30%
Moderate	7	70%
High	0	0%

#### **Association Findings**

Emotional stability showed significant association with age, family income, and educational status ( $p > 0.05$  reported in study context)

Quality of life showed significant association with family income, occupation, nature of marriage, and type of family ( $p < 0.05$ )

### **Discussion**

The study findings indicate that the majority of women experienced a moderate level of quality of life and emotional stability. However, a significant proportion reported severe impairment in quality of life and low emotional stability, highlighting the psychological burden of infertility. The absence of participants with high emotional stability or good quality of life emphasizes the profound emotional impact of primary infertility.

### **Summary**

The study was conducted to assess the quality of life and emotional stability among women with primary infertility attending the infertility clinic at SMVMCH, Puducherry. A quantitative descriptive research design was used, and 10 participants were selected through purposive sampling. Data were collected using demographic variables, a modified WHOQOL questionnaire, and the Cognitive Emotion Regulation Questionnaire (CERQ).

The findings revealed that the majority of women had a moderate level of quality of life (70%), while 30% experienced severe impact. Similarly, 70% of participants had moderate emotional stability and 30% had low emotional stability, with none showing high stability. Significant associations were found between emotional stability and variables such as age, income, and education, while quality of life was associated with income, occupation, type of marriage, and family type.

The study concludes that primary infertility significantly affects the psychological and emotional well-being of women, highlighting the need for counseling, emotional support, and holistic care to improve their quality of life.

### **Conclusion**

The study concludes that women with primary infertility experience compromised quality of life and emotional stability. Infertility is not merely a medical condition but a multidimensional stressor affecting physical, psychological, social, and environmental domains. There is a strong need for psychological support, counseling, and holistic care to improve the well-being of affected women.

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## **A STUDY TO ASSESS THE WORK EFFECTIVENESS OF SALINE PRE-FILLED SYRINGES (BD POSIFLUSH) VERSUS ROUTINE NORMAL SALINE FLUSH TO MAINTAIN THE PATENCY OF PERIPHERAL VENOUS CATHETER AMONG HOSPITALIZED PATIENTS IN SELECTED HOSPITAL AT PUDUCHERRY**

**M. Suniram Priscilla**

College of Nursing, Pondicherry Institute of Medical Sciences

### **Abstract**

**Background:** Peripheral intravenous catheters require proper maintenance to ensure patency and prevent complications. Pre-filled saline syringes like BD PosiFlush may offer advantages over routine saline flushes.

**Aim:** To compare the effectiveness of BD PosiFlush and routine normal saline flushes in maintaining catheter patency.

**Methods:** A randomized controlled trial was conducted among 34 hospitalized patients, divided into experimental and control groups. Catheter patency was assessed using a standard tool, and data were analyzed using descriptive statistics and Fisher Exact test.

**Results:** Both groups showed similar catheter patency duration, with no statistically significant difference ( $p = 0.214$ ). However, BD PosiFlush was preferred by nurses for its convenience and time efficiency.

**Conclusion:** BD PosiFlush is as effective as routine saline flushes in maintaining catheter patency, though it offers practical advantages.

**Keywords:** Peripheral Intravenous Catheter, BD Posiflush, Saline Flush, Catheter Patency.

### **Introduction**

Flushing peripheral intravenous catheters with 0.9% normal saline is a standard nursing practice to maintain catheter patency and prevent complications. Occlusion may occur due to thrombotic buildup, drug precipitation, or mechanical factors. Effective flushing techniques are essential to prolong catheter life and improve patient comfort. Pre-filled saline syringes have been introduced to improve efficiency, reduce contamination, and enhance patient safety.

### **Objectives of the Study**

- To assess the level of patency of peripheral venous catheters before and after intervention in both groups
- To determine the effectiveness of saline pre-filled syringes (BD PosiFlush) versus routine saline flush

## Research Methodology

- **Research Approach:** Quantitative
- **Research Design:** Randomized Controlled Trial (RCT)
- **Population:** Patients with peripheral intravenous cannula
- **Sample:** Adult patients receiving IV medication twice daily
- **Sample Size:** 34 (17 experimental, 17 control)
- **Sampling Technique:** Consecutive sampling with randomization
- **Study Setting:** General Surgery Ward, PIMS

## Intervention

Group	Intervention Description
Experimental (n=17)	2.5 ml pre-filled saline syringe (BD PosiFlush) before and after medication
Control (n=17)	2.5 ml routine normal saline flush before and after medication

## Tool for Data Collection

Peripheral intravenous catheter patency was assessed using a standardized catheter tracker form.

## Scoring Interpretation:

Score 0 → Patent catheter

Score  $\geq 1$  → Not patent

## Data Analysis

Data were analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (independent sample t-test).

## Results

**Table 1: Mean Patency Duration (Hours)**

Group	Mean $\pm$ SD (Hours)
PosiFlush Group	61.12 $\pm$ 12.30
Routine Flush Group	56.20 $\pm$ 10.21

p-value = 0.214 (Not statistically significant)

## Findings

The findings revealed that catheter patency lasted longer in the PosiFlush group compared to the routine flush group. The peak patency duration in the PosiFlush group ranged between 72 to 74 hours, whereas the routine flush group showed earlier catheter failure, with patency lasting only 47 to 56 hours. The overall difference in patency duration between the two groups was

approximately 5 hours, indicating better effectiveness of PosiFlush in maintaining catheter patency.

### **Discussion**

The study findings indicate that both BD PosiFlush pre-filled syringes and routine normal saline flushes are effective in maintaining peripheral intravenous catheter patency, with no statistically significant difference observed ( $p = 0.214$ ). This suggests that both methods are safe for clinical use. Although BD PosiFlush showed slightly better outcomes, the difference was not significant, possibly due to the small sample size. Nurses preferred BD PosiFlush because of its ease of use, reduced preparation time, and improved workflow efficiency. Additionally, it helps reduce contamination risk and ensures consistency in practice. Further research with larger sample sizes and cost-effectiveness analysis is recommended.

### **Summary**

The study was conducted to compare the effectiveness of saline pre-filled syringes (BD PosiFlush) and routine normal saline flushes in maintaining peripheral intravenous catheter patency. A quantitative randomized controlled trial design was used among 34 patients, with 17 in the experimental group and 17 in the control group. The experimental group received BD PosiFlush, while the control group received routine saline flushes. Catheter patency was assessed using a standardized tool, and data were analyzed using descriptive and inferential statistics.

The findings showed that the mean catheter patency duration was slightly higher in the PosiFlush group ( $61.12 \pm 12.30$  hours) compared to the routine flush group ( $56.20 \pm 10.21$  hours), though the difference was not statistically significant ( $p = 0.214$ ). Despite similar effectiveness, nurses preferred BD PosiFlush due to its convenience, time-saving nature, and reduced risk of contamination.

The study concludes that BD PosiFlush is as effective as routine saline flushes in maintaining catheter patency, with added practical advantages, while routine saline remains a cost-effective option.

### **Conclusion**

Saline pre-filled syringes (BD PosiFlush) provide practical advantages such as convenience and time-saving benefits, while routine saline flush remains a cost-effective alternative. Further large-scale randomized controlled trials are recommended to validate these findings.

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## **A RETROSPECTIVE CASE CONTROL STUDY TO ASSESS THE RISK FACTORS FOR SLEEP DEPRIVATION AND COPING STRATEGIES AMONG THE STUDENTS IN SELECTED ARTS AND SCIENCE COLLEGE IN PUDUCHERRY**

**Sundari**

Mailam Nursing College, Mailam, Tamil Nadu 604304

### **Abstract**

**Background:** Sleep is vital for physical and mental health, but college students are prone to sleep deprivation due to academic pressure and lifestyle habits.

**Aim:** To assess risk factors for sleep deprivation and coping strategies among college students.

**Methods:** A retrospective case-control study was conducted among 500 students selected through purposive sampling. Sleep quality, risk factors, and coping strategies were assessed using standardized tools, and data were analyzed using descriptive and inferential statistics.

**Results:** Most cases had moderate sleep deprivation and moderate coping, while controls showed good sleep and coping. Key risk factors included night study, social networking, and poor sleep habits. A moderate positive correlation was found between sleep deprivation and coping ( $r = 0.531$ ).

**Conclusion:** Sleep deprivation is common among students and influenced by lifestyle factors, highlighting the need for awareness and healthy sleep practices.

**Keywords:** Sleep Deprivation, College Students, Risk Factors, Coping Strategies.

### **Introduction**

Sleep is an essential biological process that plays a vital role in maintaining overall health and optimal body functioning. It is a complex physiological state regulated by interactions between brain regions, neurotransmitters, and hormones. Disturbances in sleep can significantly affect physical and mental health. Sleep deprivation, whether acute or chronic, can lead to fatigue, reduced concentration, mood disturbances, and increased risk of various health problems such as obesity, depression, and immune dysfunction.

Globally, sleep deprivation is highly prevalent among college students. Studies indicate that a large proportion of students do not achieve adequate sleep due to academic stress and lifestyle factors. This highlights the need to assess sleep deprivation and coping strategies among students.

The present study aimed to assess the risk factors for sleep deprivation and coping strategies among students in a selected Arts and Science College in Puducherry.

### **Need for Study**

In worldwide national sleep foundation (2014), 7 out of every 10 college students says, that they get less than the recommended amount of sleep every night. 68% of college students say that they have trouble being able to fall asleep at night because they're stressed out because of their academics or something that is affecting them emotionally. 12% of students who don't get enough sleep every night end up falling asleep in class at least 3 times per month. During a normal week of college classes, 20% of students will pull at least one all-nighter every month.

### **Statement of the Problem**

A retrospective case control study to assess the risk factors for sleep deprivation and coping strategies among the students in selected Arts and Science College in Puducherry

### **Objectives:**

- To assess the level of sleep deprivation and coping strategies among the students in selected Arts and Science College.
- To estimate the risk factors for sleep deprivation among the students in selected Arts and Science College.
- To find out the correlation between level of sleep deprivation and coping strategies among the students in selected Arts and Science College.
- To find out the association between the level of sleep deprivation with the selected demographic variables.
- To find out the association between the coping strategies with the selected demographic variables.

### **Review of literature**

The review of literature was organized into three sections: studies related to sleep deprivation, risk factors of sleep deprivation, and coping strategies.

Previous studies have reported a high prevalence of sleep deprivation among adolescents and college students. Factors such as low physical activity, excessive screen time, and stress significantly contribute to poor sleep quality. Coping strategies vary among individuals, and effective coping mechanisms such as adjusting sleep schedules have been associated with better sleep outcomes.

### **Methodology**

A quantitative research approach was adopted for the study, using a non-experimental retrospective case-control design. The study was conducted at Idhaya College of Arts and Science for Women, Puducherry.

The population consisted of B.Sc. students, and the sample included 500 students, of which 212 were cases and 288 were controls. A purposive sampling technique was used.

The tools used for data collection included:

- Demographic questionnaire
- Modified Groningen Sleep Quality Scale
- Risk factor checklist
- Coping strategies Likert scale

Data were collected over a period of four weeks. Ethical approval was obtained, and informed consent was secured from all participants.

### Analysis and interpretation

#### Section A: Distribution of Demographic Variables

**Table 4.1: Frequency and Percentage Distribution of Demographic Variables (n=500)**

Demographic Data	Case (N)	Case (%)	Control (N)	Control (%)
Age (years)				
17–18	114	53.7	124	43
19–20	75	35.3	105	36
21–22	17	8	44	15
Above 23	16	2.8	15	7
Religion				
Hindu	140	66	193	67
Muslim	31	14.6	41	14
Christian	41	19.3	54	18.7
Others	0	0	0	0

#### Interpretation

Most participants belonged to the 17–18 years age group. The majority were Hindu and unmarried.

Most participants resided in urban areas and followed a mixed diet.

#### Sleep Deprivation & Coping Strategies

**Table 4.2.1: Level of Sleep Deprivation**

Level	Case (N)	Case (%)	Control (N)	Control (%)
Good	0	0	288	100
Moderate	198	94	0	0
Poor	14	6	0	0

#### Interpretation

Most cases had moderate sleep deprivation, while all controls had good sleep quality.

**Table 4.2.2: Coping Strategies**

Level	Case (N)	Case (%)	Control (N)	Control (%)
Good	2	1	262	91
Moderate	192	91	26	9
Poor	18	7	0	0

**Interpretation**

Most cases had moderate coping strategies, whereas controls demonstrated good coping strategies.

**Section C: Risk Factors**

**Interpretation**

Major risk factors identified were night studies, late-night social networking, and lifestyle habits such as caffeine intake and screen exposure.

**Section D: Correlation**

**Table 4.4: Correlation between Sleep Deprivation and Coping Strategies**

Variable	Mean	SD	r value
Sleep deprivation	19	2.75	
Coping strategies	30.64	7.75	0.531

**Interpretation**

There was a moderate positive correlation between sleep deprivation and coping strategies.

**Section E: Association with Demographics**

**Interpretation**

Significant association was found between sleep deprivation and marital status, income, and dietary pattern. No significant association was observed with age, religion, or occupation.

**Section F: Coping Strategies Association**

**Interpretation**

Coping strategies showed significant association with income and dietary pattern, while other variables were not significant.

**Discussion**

The study findings revealed that a majority of students experienced moderate sleep deprivation and adopted moderate coping strategies. Risk factors such as night studies and social media usage were strongly associated with poor sleep quality. The findings were consistent with previous studies indicating that sleep deprivation is common among college students and is influenced by lifestyle and behavioral factors.

## Summary

The study concluded that sleep deprivation is highly prevalent among students, with several modifiable risk factors contributing to it. There is a moderate relationship between sleep deprivation and coping strategies.

## Conclusion

The present study aims to assess the risk factors for sleep deprivation and coping strategies among the students in selected Arts and Science College in Puducherry. The result of this study showed that (3.565), night studies (1.336), friends in social network till late night (1.194), physical exercise before bed time (1.045) were the major risk factors for sleep deprivation. Hence the H1 was accepted stated significant relationship between the risk factors and level of sleep deprivation among BSc students.

## Implications

- Nursing Practice: Nurses can identify sleep deprivation and promote coping strategies in hospital and community settings.
- Nursing Administration: Organize training and awareness programs on risk factors and management of sleep deprivation.
- Nursing Education: Include updated content on sleep deprivation and encourage student-led awareness programs.
- Nursing Research: Promote further studies on sleep deprivation and interventions to reduce its risk factors.

## Recommendations

- Further studies on interventions like meditation
- Studies linking sleep and academic performance

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## **EFFECTIVENESS OF DISPOSABLE INFECTION FREE HEMOSTATIC TOURNIQUET (DIFHT) ON LEVEL OF INFECTION IN ARTERIO-VEINOUS FISTULA (AVF) ACCESS SITE AMONG PATIENTS UNDERGOING HAEMODIALYSIS IN SELECTED HOSPITAL, PUDUCHERRY – A RANDOMIZED CONTROLLED TRIAL**

**R. Vijay**

Indira Gandhi Medical College & Research Institute, Kathirkamam, Puducherry, 605009

### **Abstract**

**Background:** Patients undergoing hemodialysis are at high risk of infection at the arteriovenous fistula (AVF) site. Preventing access-site infection is essential to improve patient outcomes.

**Aim:** To evaluate the effectiveness of a Disposable Infection Free Hemostatic Tourniquet (DIFHT) in reducing AVF access-site infection.

**Methods:** A randomized controlled trial was conducted among 60 hemodialysis patients, divided into experimental and control groups. The experimental group received DIFHT, while the control group received conventional care. Data were analyzed using descriptive and inferential statistics.

**Results:** The experimental group showed significantly lower infection levels compared to the control group ( $p < 0.001$ ), indicating the effectiveness of DIFHT.

**Conclusion:** DIFHT is an effective and cost-efficient method to reduce AVF access-site infection and improve patient safety in hemodialysis units.

**Keywords:** Hemodialysis, AVF, Infection Control, DIFHT, Randomized Controlled Trial.

### **Introduction**

Hemodialysis patients require repeated access through an arteriovenous fistula (AVF), making them highly prone to access-site infections. Reuse of conventional tourniquets increases the risk of cross-contamination, leading to complications and higher healthcare costs. Maintaining strict infection control is essential for patient safety. The Disposable Infection Free Hemostatic Tourniquet (DIFHT) offers a sterile, single-use solution to reduce infection risk. This study aims to evaluate the effectiveness of DIFHT in reducing AVF access-site infections among hemodialysis patients in a selected hospital in Puducherry.

### **Need for the Study**

Chronic kidney disease affects over 800 million people worldwide, and many require hemodialysis as a life-sustaining treatment. Hemodialysis remains the most common dialysis modality globally, but patients undergoing this procedure are at high risk of morbidity and mortality, particularly due to infections related to vascular access such as arteriovenous fistula (AVF) site infections.

Traditionally, simple hemostatic tourniquets are used to control bleeding after dialysis; however, the repeated use of non-sterile, reusable tourniquets and poor hygienic practices significantly increase the risk of cross-contamination and infection at the AVF site.

### Objective

To evaluate the effect of Disposable Infection Free Hemostatic Tourniquet (DIFHT) on level of infection in arteriovenous fistula access site among patients undergoing hemodialysis.

### Hypothesis

**H<sub>1</sub>:** There is a significant difference in the level of infection in Arterio-venous fistula access site between patient's receiving hemodialysis those who had been subjected to Disposable Infection Free Hemostatic Tourniquet (DIFHT) than those who do not.

### DIFHT

It is made up of locally available hemostatic materials, It consists of four-layered structures – i.e. micro-perforated layer, non-woven pad, plantain pseudo stem fiber, absorbent gauze with antiseptic gel pack. All layers are compressed and stitched together. Side strap is made up of Loofah Fibers. After manufacturing, the tourniquet is sterilized by ETO method of sterilization. This tourniquet is specially prepared for hemodialysis patients with vascular access.

### Key differences

Conventional tourniquet (SHT)	DIFHT
Non-degradable and non-disposable	Bio-degradable and Disposable
Single layer made up of velcro tape is used to arrest bleeding	Four layers – Microperforated layer, non-woven material, plantain stem fiber, absorbent gauze with antiseptic gel pack.
No specific hemostatic device	Specific for patients undergoing hemodialysis through AVF vascular access.
Infection rate increases	Infection rate decreases

Conventional tourniquet (SHT)	DIFHT
Non-specific	It achieves SDG goals 3, 6 and 10
Expensive (Rs.45 INR)	Cost-effective (Rs. 3-5 INR)
Hemostasis is achieved in more than 8 hours.	Hemostasis is achieved within 2-4 hours.
Firm, non-stretchable and discomfort	Easily stretchable, more comfort
Risk for pseudoaneurysm	Reduces the risk of pseudoaneurysm

## **Methodology**

A quantitative research approach was adopted for the present study, using a randomized controlled trial with a two-group pre-test and post-test design. The study was conducted in the hemodialysis unit at MGMC&RI, Puducherry. The target population comprised patients with chronic kidney disease and end-stage renal disease undergoing hemodialysis. The sample included patients receiving hemodialysis twice a week through permanent arterio-venous fistula access at MGMC&RI, Puducherry, who met the inclusion criteria. A simple random sampling technique was used to select the participants. The total sample size was 60, with 30 participants in the experimental group and 30 in the control group.

## **Inclusion Criteria**

- Both male and female patients
- Diagnosed with chronic kidney disease (CKD) or end-stage renal disease (ESRD)
- Undergoing hemodialysis through permanent arterio-venous fistula access

## **Exclusion Criteria**

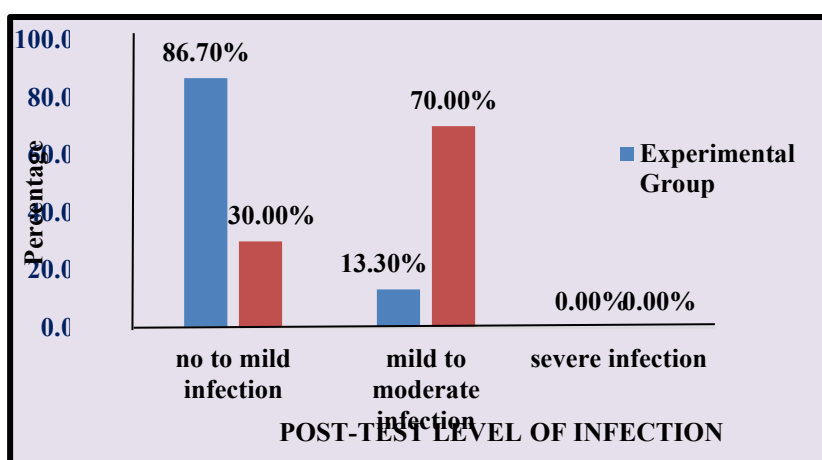
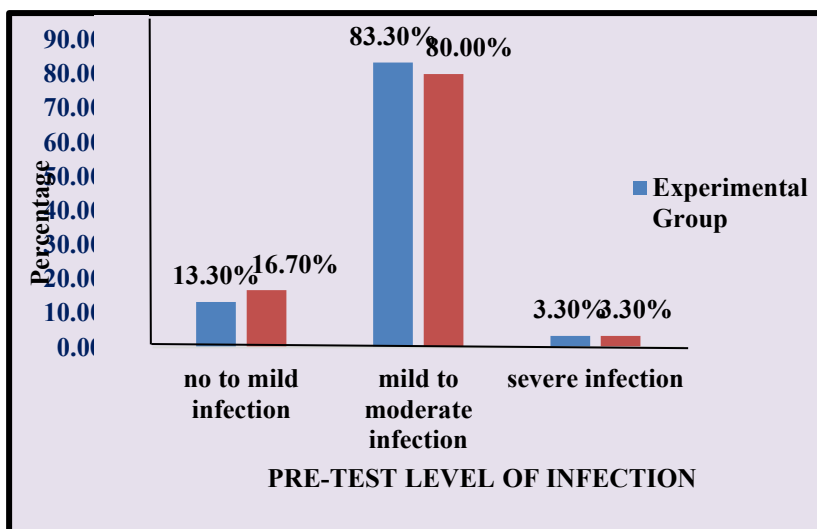
- Patients undergoing hemodialysis via catheter-based interventions
- Patients not willing to participate in the study
- Critically ill patients
- Patients with altered sensorium
- Patients with a history of systemic infection
- Patients diagnosed with vascular or bleeding disorders (coagulopathy)
- Patients who have recently undergone arterio-venous fistula angioplasty

## **Data Collection Procedure**

After obtaining permission from the concerned authorities and the Institutional Human Ethics Committee, data collection was carried out from 02.05.2023 to 10.06.2023. A total of 60 participants were selected using simple random sampling. Informed consent was obtained from all participants. Pre-test data, including demographic and clinical variables, were collected using an interview method, and the level of infection at the AVF access site was assessed using a structured observational checklist. The intervention (DIFHT) was administered to the experimental group, while the control group received routine care. A post-test assessment was conducted after one month to evaluate the outcomes.

## **Results**

**Section B:** Assess the level of infection in arteriovenous fistula access site among patients undergoing hemodialysis.



**Section C:** Evaluate the Effectiveness of Disposable Infection Free Hemostatic Tourniquet on Level of Infection in Arteriovenous Fistula Access Site.

Group	Observation	Mean	Median	Standard Deviation	Mann-Whitney Test	p-value
Experimental Group	Post Test	0.57	0	0.73	4.885	0.001***
Control Group	Post Test	1.8	2	0.81		

\*P<0.05: statistically significant (SS), \*\*\* -P<0.001: highly statistically significant (HSS)

### Discussion

**Objective:** Evaluate the effect of Disposable Infection Free Hemostatic Tourniquet (DIFHT) on level of infection in arteriovenous fistula access site among patients undergoing hemodialysis.

The findings revealed that in the experimental group, most participants had mild to moderate infection during pre-test, which significantly reduced in the post-test, with the majority showing

no to mild infection, indicating improvement. In contrast, the control group showed only minimal reduction, with many participants still having mild to moderate infection in the post-test. Overall, the reduction in infection levels was greater in the experimental group compared to the control group. The mean post-test infection score was lower in the experimental group (0.57) than in the control group (1.8), and the Mann–Whitney test value (4.885) showed a highly statistically significant difference ( $p < 0.001$ ). This confirms that the intervention was effective in reducing AVF access-site infections.

### Conclusion

The prevalence of arteriovenous fistula access site infection is higher among hemodialysis patients due to improper hygiene and low immune status. So, the adequate fistula site care is more important for the patient to improve the clinical outcome. Hence, the researcher concluded that, the DIFHT can be applied for AVF decannulation site to gain a better outcome and well-being.

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# A STUDY TO ASSESS THE EFFECTIVENESS OF CENTRAL LINE BUNDLE CARE AMONG PATIENTS IN CRITICAL CARE UNIT AT SVMCH AT PUDUCHERRY, IN A VIEW TO DEVELOP A STANDARD PROTOCOL

**K. Puviyarasi**

Mailam Nursing College, Tindivanam, Mailam, Tamil Nadu 604304

## **Abstract**

**Background:** Healthcare-associated infections, especially central line-associated bloodstream infections (CLABSIs), are common in critical care units and increase morbidity and healthcare costs. Proper bundle care is essential for prevention.

**Aim:** To evaluate the effectiveness of central line bundle care in reducing complications among patients in a critical care unit.

**Methods:** A pre-experimental one-group pre-test post-test design was used among 48 patients selected through purposive sampling. Data were collected using a structured observational checklist and analyzed using descriptive and inferential statistics.

**Results:** Post-test scores showed a significant reduction in complications after implementing bundle care ( $p < 0.001$ ), indicating its effectiveness.

**Conclusion:** Central line bundle care is highly effective in reducing complications and should be implemented as a standard protocol in critical care settings.

**Keywords:** CLABSI, Central Line Bundle Care, Critical Care, Infection Prevention.

## **Introduction**

Healthcare-associated infections are a major problem worldwide. Among healthcare associated infection, central line-associated bloodstream infections are the most important cause of morbidity, mortality and prolonged hospital stay, especially in critically ill patients. A central line is a type of catheter that is placed in a large vein that allows multiple intravenous fluids to be given and blood to be drawn. When compared to a typical intravenous line a central line is larger can stay in place longer, can deliver a greater volume of fluids and allows blood to be drawn easily.

The central line bundle is a group of evidence-based interventions for patients with intravascular central catheters that, when implemented together, result in better outcomes than when implemented individually. The key components of the central line bundle are hand hygiene, maximal barrier. Precautions upon insertion, chlorhexidine skin antiseptics, optimal catheter site selection, with subclavian vein as the preferred site for non-tunneled catheters, daily review of line necessity with prompt removal of unnecessary lines.

### Statement of the Problem

A study to assess the effectiveness of central line bundle care among patients in Critical care unit at SMVMCH at Puducherry, In a view to develop a standard protocol

### Objectives

- To assess the health status of the patients with central line in Critical care unit.
- To assess the effectiveness of the central line bundle care among patients in critical care unit.
- To associate the level of effectiveness of central line bundle care among patients in Critical care unit with their selected demographic variables.

### Review of Literature

Kyoung Hwa Lee *et al.* (2018) conducted a cross-sectional study in Korea to assess the effect of central line bundle compliance on central line-related infections among 1672 patients using a convenient sampling technique. Data were collected based on four components of the central line (CL) bundle: hand hygiene, maximal sterile barrier precautions, chlorhexidine use, and appropriate site selection. The results showed varying compliance rates across settings—22.3% in the emergency room, 28.5% in ICU, 36.5% in general wards, and 84.6% in the operating room. The highest infection rates were observed in ICU patients where bundle compliance was incomplete. The study concluded that strict adherence to all bundle components is essential to prevent central line-associated bloodstream infections (CLABSIs).

Mona F. Salama *et al.* (2016) conducted a study in Kuwait on the implementation of a central venous catheter bundle in an intensive care unit among 1000 patients using purposive sampling. The bundle included hand hygiene, maximal barrier precautions, use of 2% chlorhexidine gluconate in 70% ethanol, optimal catheter site selection, and daily assessment of catheter necessity. The results revealed that during the pre-intervention period, 80 CLABSIs occurred over 5367 catheter-days, with an incidence rate of 14.9 per 1000 catheter-days ( $p < 0.001$ ). The study concluded that implementing the catheter care bundle significantly reduces infection rates, healthcare costs, and patient morbidity, and recommended its widespread adoption.

### Hypotheses

- **H1:** There will be significant difference in risk of complication before and after providing central line bundle care.
- **H2:** there will be a significant association between effectiveness of central line bundle care among patients with central line with their selected demographic variables

### Methodology

A quantitative research approach was adopted for the present study, using a one-group pre-test and post-test research design. The study population consisted of all patients with a central line admitted

to the critical care unit at SMVMCH. The sample included 48 patients with central lines in the same setting, selected using a non-probability purposive sampling technique. Data collection involved a pre-assessment of the risk of complications, followed by the implementation of an intervention for a period of 7 days, after which a post-assessment was conducted. The collected data were analyzed and interpreted using both descriptive and inferential statistical methods.

### **Criteria for Sample Selection**

#### **Inclusion Criteria**

- The patients who are in central line irrespective of mode of treatment
- All the patient with central line in ICU
- Conscious and Unconscious patient.
- Both male and female

#### **Exclusion Criteria**

- Patients who are in OPD.
- Patients with uncorrected bleeding disorder
- Patients with femoral line
- Patients with skin infection at insertion site

#### **Data Collection Procedure**

Formal permission was obtained from the Department of Anaesthesiology prior to the study. Informed written consent was obtained from all the participants. The samples were selected using a purposive sampling technique. The risk of complications was initially assessed using a Central Line Complication Observational Checklist. Following the assessment, appropriate care related to central line management was explained to the participants. Central line bundle care was then provided for a duration of 7 days. After completion of the intervention, the participants were reassessed using the same observational checklist. The effectiveness of the central line bundle care was evaluated based on the pre-test and post-test findings. Finally, the collected data were analyzed and the results were interpreted using appropriate statistical methods.

Totally 48 participants who were with central line were selected. For all 48 participants, level of complication was assessed and central line bundle care was given from the first day of care to seventh day of care. The findings were analyzed statistically. The result shows that 76.4% of the patients had reduce the risk of complication. The result of the pilot study revealed that the study was feasible and practicable and no modification made in the tool after pilot study.

#### **Description of the Tool**

The tool consists of two sections,

**Section A:** This section consists of socio-demographic variables such as age, gender, religion, occupation, education, type of family, family income, residential status, dietary pattern, previous history of any illness, duration of central line, history of getting antibiotics, site of central line

**Section B:** The level of risk of complication was assessed by using the central line complication observational checklist

### Scoring and interpretation

Score	Level of Complication
0	No complication
1-5	Low risk of complication
6-11	High risk of complication

### Data Analysis and Interpretation

**Section A:** Description of the demographic variables among patients in Critical care unit.

**Section B:** Assessment of the level of the health status of the patients with central line in Critical care unit.

**Section C:** Evaluate the effectiveness of the central line bundle care among patients in critical care unit.

**Section D:** Associate the level of effectiveness of the central line bundle care among patients in critical care unit with their selected demographic variables

**Table 1: Frequency and Percentage wise Distribution of Demographic Variables among patients in Critical care unit**

Sl. No	Demographic Variables	Category	Frequency (N)	Percentage (%)
1	Age in years	20–29	10	20.8
		30–39	8	16.7
		40–49	7	14.6
		Above 50	23	47.9
2	Gender	Male	28	58.3
		Female	20	41.7
		Transgender	0	0
3	Religion	Hindu	41	85.4
		Muslim	6	12.5
		Christian	1	2.1
		Others	0	0
4	Educational status	Uneducated	26	54.2

		Primary school	19	39.5
		Higher secondary	1	2.1
		Degree and above	2	4.2
5	Occupation status	Government	8	16.7
		Non-government	12	25
		Daily wage	16	33.3
		Home worker	12	25
6	Type of family	Nuclear family	28	58.3
		Joint family	20	41.7
7	Family income	No income	29	60.4
		Below 7000	17	35.4
		Rs.7001–15000	2	4.2
		Above Rs.15000	0	0
8	Residential status	Urban	31	64.6
		Rural	17	35.4
9	Dietary pattern	Vegetarian	28	58.3
		Non-vegetarian	20	41.7
10	Previous history of illness	Yes	31	64.6
		No	17	35.4
11	Duration of central venous line	1–10 days	29	60.3
		11–20 days	13	27.1
		21–30 days	3	6.3
		2 months and above	3	6.3
12	History of getting antibiotics	Yes	29	60.4
		No	19	39.6
13	Sites of central line	Internal jugular vein	44	91.7
		Subclavian vein	4	8.3
		Peripherally inserted central line	0	0

14	Indication of central line	Central venous pressure monitor	2	4.1
		Fluid therapy and medication	9	18.8
		Dialysis	37	77.1
		Vasopressors	0	0

**Frequency and percentage wise distribution of Pre-test and post- test of the level of the health status of the patients with central line in Critical care unit.**

Level of Health Status	Pre-test: Frequency (N)	Pre-test: Percentage (%)	Pre-test: Mean & SD	Post-test: Frequency (N)	Post-test: Percentage (%)	Post-test: Mean & SD
No Complications	0	0	5.27 ± 0.983	9	18.8	4.43 ± 1.412
Low Complications	41	85.4		39	81.2	
High Complications	7	14.6		0	0	

Thus, the research hypothesis, there will be significant difference in central line patients with before and after the central line bundle care in experimental group is accepted and statistically significant at  $p < 0.05$  level. This present study revealed that providing central line bundle care regularly to provide direct evidence that completing all components of the Central Line bundle perfectly in each patient is essential for preventing Central line Associated Blood Stream Infections. This study results support the possibility that infection prevention can be improved through customized education and training of ICCU staff nurses according to develop a standard protocol.

### Result

This study findings revealed that the patients with central line in pretest 41 had low level of complication and 7 had high level of complication, in post-test 39 had low level of complication and 9 had no complication.

### Conclusion

The study concludes that central line bundle care effectively reduces complications in critically ill patients. Adherence to evidence-based practices such as hand hygiene, aseptic techniques, and regular assessment significantly prevents CLABSIs. The findings highlight the crucial role of nurses in early detection, patient education, and consistent implementation of standardized care, ultimately improving patient outcomes and quality of care.

## Nursing Implications

Central line bundle care emphasizes the nurse's role in infection prevention through updated knowledge and practice. Nursing education should strengthen curriculum content, promote training programs, and provide clinical exposure to enhance skills and evidence-based practice. In clinical services, nurses must possess specialized skills to identify complications early, educate patients, and effectively implement bundle care to reduce risks and improve patient wellbeing.

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## **A STUDY TO ASSESS THE EFFECTIVENESS OF RELAXATION TECHNIQUES ON OCCUPATIONAL STRESS AND ANXIETY AMONG WASTE MANAGEMENT WORKERS AT ARIYANKUPPAM PANCHAYAT OFFICE IN PUDUCHERRY**

**S. Sivasankari**

A G Padmavati's College of Nursing, Bahour, Puducherry 607402

### **Abstract**

**Background:** Occupational stress is a major concern among waste management workers, as their work environment often exposes them to physical strain, heavy workload, occupational hazards, and psychological pressure. Continuous exposure to stressful situations may contribute to anxiety, reduced work efficiency, and poor mental well-being. Relaxation techniques are considered simple, non-pharmacological, and cost-effective methods that can help in reducing stress and anxiety and improving overall psychological health among workers.

**Aim:** The study aimed to assess the effectiveness of relaxation techniques on reducing occupational stress and anxiety among waste management workers at Ariyankuppam Panchayat Office, Puducherry. The study also intended to assess the level of stress and anxiety and to associate these levels with selected demographic variables.

**Methods:** A quantitative evaluative research approach with a pre-experimental one-group pre-test and post-test design was adopted for the study. A total of 60 waste management workers were selected using a non-probability convenience sampling technique. Data were collected using standardized tools to assess the baseline level of occupational stress and anxiety among the participants. Following the pre-test, relaxation techniques were administered to the workers. A post-test was conducted after the intervention to evaluate the effectiveness of the relaxation techniques in reducing stress and anxiety levels.

**Results:** The findings revealed that the pre-test mean score of occupational stress was  $88.65 \pm 2.96$ , whereas the post-test mean score was reduced to  $39.48 \pm 9.16$ , with a mean difference of 49.17. The post-test mean score of anxiety was  $13.42 \pm 5.15$ . The calculated paired “t” test value ( $t = 39.668$ ) was statistically significant at  $p < 0.001$ , indicating that relaxation techniques were highly effective in reducing occupational stress and anxiety among waste management workers. Associations were also observed between stress and anxiety levels and selected demographic variables.

**Conclusion:** The study concluded that relaxation techniques are effective, simple, and low-cost interventions for reducing occupational stress and anxiety among waste management workers. Regular practice of relaxation therapies can improve the psychological well-being and quality of life of workers in occupational settings.

## **Introduction**

Waste management workers play a crucial role in maintaining public health and environmental hygiene. Globally, approximately 15–20 million individuals are engaged in waste management work. However, these workers are often exposed to significant occupational hazards, including long working hours, low wages, and exposure to harmful waste materials, leading to high levels of stress and anxiety.

Studies conducted in India have reported that nearly 60% of waste management workers experience high occupational stress, and about 35–40% suffer from anxiety symptoms. These findings highlight the need for effective interventions to improve their mental well-being. Relaxation techniques are considered a simple and cost-effective method to reduce stress and anxiety.

## **Objectives**

- To assess the level of stress and anxiety among waste management workers
- To evaluate the effectiveness of relaxation techniques
- To find the association between stress and anxiety with selected demographic variables

## **Methodology**

A quantitative research approach was adopted for this study. The study was conducted among waste management workers working as roadside sweepers, waste collectors, and truck drivers at Ariyankuppam Panchayat Office, Puducherry.

A total of 60 participants were selected using a non-probability convenience sampling technique. The participants were divided into two groups of 30 each. Data were collected using standardized tools such as the Cooper Modified Stress Index Scale and Modified Beck's Anxiety Inventory.

The intervention consisted of relaxation techniques administered for 45 minutes daily for 14 days. A pre-test was conducted before the intervention, and a post-test was conducted on the 15th day.

## **Inclusion Criteria**

- Waste management workers listed in the Panchayat attendance register
- Workers engaged for 8–12 hours daily
- Workers willing to participate

## **Exclusion Criteria**

- Workers with illness preventing participation
- Workers unable to perform relaxation techniques

## **Data Collection Procedure**

Ethical clearance was obtained prior to the study. Participants were selected using convenience sampling. Pre-test data were collected, followed by administration of relaxation techniques for 14

days. Reinforcement was provided through follow-up communication. Post-test assessment was conducted on the 15th day.

### Analysis and interpretation

#### Section A: Level of Stress and Anxiety

**Table 1: Pre-test and Post-test Level of Stress (n=60)**

Level of Stress	Pre-test (N)	Pre-test (%)	Post-test (N)	Post-test (%)
Mild	0	0	11	18.33
Moderate	0	0	47	78.34
Severe	60	100	2	3.33

**Interpretation:** All participants had severe stress in the pre-test. After intervention, most participants shifted to moderate stress, indicating improvement.

**Table 2: Pre-test and Post-test Level of Anxiety (n=60)**

Level of Anxiety	Pre-test (N)	Pre-test (%)	Post-test (N)	Post-test (%)
Mild	0	0	25	41.67
Moderate	0	0	29	48.33
Severe	60	100	6	10

**Interpretation:** All participants had severe anxiety initially. Post-test results showed a reduction, with most participants experiencing mild to moderate anxiety.

#### Section B: Effectiveness of Relaxation Techniques

**Table 3: Comparison of Pre-test and Post-test Stress Scores**

Variable	Mean	SD	Mean Difference	t-value	Significance
Pre-test Stress	88.65	2.96			
Post-test Stress	39.48	9.16	49.17	39.668	p<0.001

**Interpretation:** There was a significant reduction in stress levels after intervention.

**Table 4: Comparison of Pre-test and Post-test Anxiety Scores**

Variable	Mean	SD	Mean Difference	t-value	Significance
Pre-test Anxiety	23.87	1.54			
Post-test Anxiety	13.42	5.15	10.45	15.193	p<0.001

**Interpretation:** Anxiety levels significantly reduced after the intervention.

#### Section C: Correlation

**Table 5: Correlation between Stress and Anxiety**

Variables	Mean	SD	r value
Stress	39.48	9.16	
Anxiety	13.42	5.15	0.527

**Interpretation:** A moderate positive correlation was found between stress and anxiety.

## Section D: Association with Demographic Variables

- Significant association was found between:
  - Resting hours and stress ( $\chi^2 = 5.875, p < 0.05$ )
  - Marital status and anxiety ( $\chi^2 = 6.237, p < 0.05$ )
- No significant association was found with other demographic variables.

## Discussion

The study revealed that all participants initially experienced severe levels of stress and anxiety, indicating a high mental health burden among waste management workers. This may be due to the demanding nature of their work environment and exposure to occupational hazards. Following the intervention, there was a significant reduction in both stress and anxiety levels. The findings indicate that relaxation techniques are effective in managing psychological distress. Regular practice of these techniques helps improve emotional stability and coping ability. It also contributes to better overall mental wellbeing among workers. These results highlight the importance of incorporating relaxation strategies into occupational health programs. Therefore, such interventions can play a vital role in promoting mental health among waste management workers.

## Conclusion

The study concludes that relaxation techniques are a simple, effective, and low-cost method for reducing occupational stress and anxiety among waste management workers. Regular use of these practices can significantly improve mental wellbeing. Integrating relaxation techniques into routine workplace programs can enhance coping ability and emotional stability. This, in turn, contributes to better productivity and overall quality of life among workers.

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## **A STUDY TO ASSESS THE PREVALENCE OF CHEWING TOBACCO USAGE AMONG RURAL POPULATION**

**P. Priyadharshini**

A G Padmavati's College of Nursing, Bahour, Puducherry 607402

### **Abstract**

**Background:** Chewing tobacco use is a common public health problem worldwide, particularly in India, where various smokeless tobacco products are widely consumed among rural populations. The use of chewing tobacco is associated with several adverse health effects, including oral cancer, dental problems, and other chronic diseases. Despite awareness regarding the harmful effects of tobacco, its use continues due to factors such as social influence, cultural practices, and socioeconomic conditions. Therefore, assessing the prevalence and influencing factors of chewing tobacco usage is essential for planning effective public health interventions.

**Aim:** The study aimed to assess the prevalence of chewing tobacco usage among the rural population aged above 18 years in the rural field practice areas of AVMC&H, Puducherry. The study also intended to identify the factors influencing chewing tobacco usage and to determine the association between chewing tobacco use and selected demographic variables.

**Methods:** A quantitative descriptive research approach was adopted for the study. A total of 900 participants who met the inclusion criteria were selected using a multistage random sampling technique. Data regarding demographic variables and chewing tobacco habits were collected using a structured interview schedule and a modified Global Adult Tobacco Survey (GATS) questionnaire. The collected data were analyzed using descriptive and inferential statistics.

**Results:** The findings revealed that the prevalence of chewing tobacco usage among the rural population was 5.9% (n=900). The commonly used chewing tobacco products included supari 17(1.9%), betel quid with tobacco dried leaves 19(2.1%), and dried tobacco leaves 17(1.9%). The major factors influencing chewing tobacco usage were peer social pressure 22(41.5%), low socioeconomic status 16(30.2%), family members' pressure 9(17.0%), cultural practices 4(7.5%), and perceived good health benefits 2(3.8%). The study also found no significant association between chewing tobacco usage and selected demographic variables.

**Conclusion:** The study concluded that chewing tobacco usage continues to be prevalent among the rural population despite awareness of its harmful effects. The findings highlight the need for effective tobacco control interventions, regular surveys, and community-based awareness programmes to reduce tobacco consumption and improve public health outcomes among rural populations.

## **Introduction**

Tobacco use is a major public health concern, especially in developing countries like India. Recent reports indicate that approximately 275 million people in India use tobacco, with smokeless tobacco use being more prevalent than smoking forms such as cigarettes and bidis. Chewing tobacco is a significant risk factor for oral cancers and precancerous conditions. Additionally, it contributes to gum disease, tooth decay, tooth loss, and increases the risk of cardiovascular diseases.

Globally, tobacco is responsible for more than 8 million deaths each year, including deaths due to second-hand smoke exposure. A large proportion of tobacco users belong to low- and middle-income countries, emphasizing the need for public health interventions. Hence, this study was undertaken to assess the prevalence and factors influencing chewing tobacco usage among the rural population.

## **Need for the Study**

Tobacco consumption leads to serious health consequences and high mortality rates. Despite awareness, the usage of chewing tobacco continues to rise, especially in rural populations. Understanding its prevalence and influencing factors is essential for planning effective preventive strategies.

## **Statement of the Problem**

A study to assess the prevalence of chewing tobacco usage among the rural population at Puducherry.

## **Objectives**

- To assess the prevalence of chewing tobacco usage
- To identify factors influencing chewing tobacco usage
- To find the association between chewing tobacco usage and selected demographic variables

## **Methodology**

A quantitative research approach was used for the study. The study was conducted among the rural population in Puducherry.

The tool used for data collection consisted of two sections:

- **Section A:** Demographic variables (age, gender, marital status, religion, education, occupation, family type, income, and source of health information)
- **Section B:** Modified Global Adult Tobacco Survey (GATS) questionnaire with 36 items

Data were analyzed using descriptive and inferential statistics. Frequency and percentage were used to assess prevalence and influencing factors. The chi-square test was applied to determine the association between variables.

## Analysis and Interpretation

### Section A: Prevalence of Chewing Tobacco

**Table 1: Distribution of Prevalence of Chewing Tobacco Usage**

Sl. No.	Prevalence of Chewing Tobacco Usage	n	%
1.	Current use of chewing tobacco		
	Every day	34	3.8
	Less than daily	19	2.1
	Never	847	94.1
	Don't know	0	0
	Refused	0	0

**Interpretation:** The study revealed that the prevalence of chewing tobacco usage was 5.9%, while 94.1% of the rural population had never used chewing tobacco.

### Section B: Practice of Chewing Tobacco

**Table 2: Distribution of Practice of Chewing Tobacco Usage**

Sl. No.	The practice of chewing tobacco usage	n	%
1.	Have you used chewing tobacco in the past		
	Every day	43	4.8
	Less than daily	10	1.1
	Never	847	94.1
	No idea	0	0
	Decline to answer	0	0
2.	When did you start using chewing tobacco		
	1 year ago	16	1.8
	2 year ago	17	1.9
	3 year ago	20	2.2
	Not ever	847	94.1
3.	Types of chewing tobacco Consumed		
	Pan masala	0	0
	Gutka	0	0
	Supari	17	1.9
	Betel quid with tobacco	19	2.1
	Dried tobacco leaves	17	1.9
	Not at all	847	94.1

4.	How soon after you wake up do you usually use chewing tobacco for the first time		
	Within 5 minutes	0	0
	6 to 30 minutes	13	1.4
	31 to 60 minutes	4	0.4
	More than 60 minutes	36	4
	Never	847	94.1

**Interpretation:** The table shows the pattern and frequency of chewing tobacco use among the population.

### Section C: Cessation of Chewing Tobacco

**Table 3: Distribution of Cessation of Chewing Tobacco Usage**

SL.No.	Cessation of chewing tobacco usage	n	%
1.	Consulting a doctor or other health care provider in the past 12 months		
	Yes	490	54.4
	No	410	45.6
	Decline	0	0
2.	Advised to stop using chewing tobacco by doctor or health care provider in the past 12 month		
	Yes	34	3.8
	No	866	96.2
3.	Tried to stop using chewing tobacco in the past 12 months		
	Yes	19	2.1
	No	34	3.8
	Never	847	94.1
4.	Try to stop using chewing tobacco During the past 12 months		
	Counseling	4	0.4
	Nicotine substitute therapy	0	0
	Other medication	0	0
	Traditional medication	10	1.1
	A quit line	5	0.6
	Never	881	97.9
5.	Thinking best way to quitting chewing tobacco?		
	Quit within the next month	3	0.3
	Thinking within the next 12 months	13	1.5

	Quit someday, but not in the next 12 months.	3	0.3
	Not interested in quitting	34	3.8
	Don't know	0	0
	Never tried	847	94.1

**Interpretation:** This table indicates attempts made by participants to quit chewing tobacco.

#### Section D: Awareness of Chewing Tobacco

**Table 4: Distribution of Awareness of Chewing Tobacco Usage**

Sl. No.	Awareness of chewing tobacco usage	n	%
1.	Noticed any health warnings on chewing tobacco in the last 30 days		
	Yes	596	66.2
	No	304	33.8
2.	Noticed any information in newspapers or books about the dangers of use or that encourages chewing tobacco products in the last 30 days		
	Yes	596	66.2
	No	304	33.8
3.	Noticed any information on television about the dangers of use or that encourages quitting chewing tobacco products in the last 30 days		
	Yes	500	55.6
	No	400	44.4
4.	Have you heard about any information on the radio about the dangers of use or that encourages quitting chewing tobacco products In the last 30 days		
	Yes	664	73.8
	No	236	26.2
5.	Noticed any information on posters about the dangers of use or that encourages quitting of chewing tobacco products in the last 30 days		
	Yes	519	57.7
	No	381	42.3
6.	Noticed any information somewhere else about the dangers of use or that encourages quitting of chewing tobacco products in the last 30 days		
	Yes	216	24
	No	684	76

7.	Warning labels on chewing tobacco led you to think about quitting in the last 30 days		
	Yes	14	1.6
	No	38	4.2
	Don’t know	1	0.1
	Never	847	94.1

**Interpretation:** A majority of participants were aware that chewing tobacco causes serious health problems.

### Section E: Knowledge of Chewing Tobacco

**Table 5: Distribution of Knowledge on Chewing Tobacco**

Sl. No.	Knowledge of chewing tobacco	n	%
1.	Is previous illness caused by chewing tobacco?		
	Yes	706	78.4
	No	144	12.7
	Don’t know	80	8.9
	Denied	0	0
2.	Chewing tobacco causes the following diseases		
2 a.	Stroke		
	Yes	406	45.1
	No	491	54.6
	Not know	3	0.3
2 b.	Heart attack		
	Yes	549	61
	No	317	35.2
	Don’t know	34	3.8
2 c.	Cancer		
	Yes	548	60.9
	No	264	29.3
	Not know	88	9.8

**Interpretation:** About 78.4% of participants knew that chewing tobacco causes serious illness. However, misconceptions were noted, such as only 54.6% recognizing its link to stroke.

## Section F: Factors Influencing Chewing Tobacco Usage

**Table 6: Distribution of Factors Influencing Chewing Tobacco Usage**

Factors influencing	n	%
Low socioeconomic status	16	30.2
Use of chewing tobacco by family members	9	17.0
Peer pressures	22	41.5
Cultural norms	4	7.5
Good health perception	2	3.8
<b>Total</b>	<b>53</b>	<b>100.0</b>

### Interpretation

The major influencing factors were:

- Peer pressure – 41.5%
- Low socioeconomic status – 30.2%
- Family influence – 17%
- Cultural norms – 7.5%
- Perceived health benefits – 3.8%

## Section G: Association with Demographic Variables

**Interpretation:** There was no significant association between chewing tobacco usage and demographic variables ( $p < 0.05$ ).

### Discussion

The study revealed a 5.9% prevalence of chewing tobacco use among the rural population, indicating a notable public health concern despite the relatively low proportion. Peer pressure (41.5%) and low socioeconomic status (30.2%) were the प्रमुख influencing factors, highlighting the role of social and economic conditions in tobacco use. Although awareness of its harmful effects was generally high, misconceptions—particularly regarding specific conditions like stroke—were identified, indicating gaps in detailed knowledge. No significant association was found between tobacco use and demographic variables, suggesting that behavioral and social factors are more influential. The findings underscore the need for targeted health education, behavior change strategies, and community-based interventions to reduce tobacco use and its health risks.

### Conclusion

The study concluded that chewing tobacco usage exists among the rural population, with a prevalence of 5.9%. Although awareness levels are relatively high, certain misconceptions persist. Peer pressure and socioeconomic factors play a major role in influencing tobacco use. Health

education programs and awareness campaigns are essential to reduce tobacco consumption and prevent associated health complications.

### Recommendations

- Similar studies can be conducted with larger sample sizes
- Studies can be replicated in different settings
- Comparative studies between rural and urban populations can be undertaken
- Awareness programs should be strengthened to reduce tobacco usage

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# **A STUDY TO ASSESS THE KNOWLEDGE ON UNMET NEEDS OF FAMILY PLANNING AMONG MARRIED WOMEN OF REPRODUCTIVE AGE ATTENDING POSTNATAL/UNDER FIVE CLINIC AT SELECTED PHC, PUDUCHERRY**

**S. Sakthypriya**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

**Background:** Family planning plays a vital role in improving maternal and child health and controlling population growth. However, many married women still have unmet needs for family planning due to inadequate knowledge, misconceptions, and limited awareness regarding contraceptive methods.

**Aim:** The study aimed to assess the knowledge regarding unmet needs of family planning among married women of reproductive age attending postnatal and under-five clinics at selected PHCs in Puducherry and to associate knowledge levels with selected demographic variables.

**Methods:** A quantitative descriptive research approach was adopted. A total of 100 married women of reproductive age were selected using simple random sampling technique. Data were collected using a structured questionnaire and analyzed using descriptive and inferential statistics.

**Results:** The findings showed that 29% of women had inadequate knowledge, 58% had moderate knowledge, and 13% had adequate knowledge regarding family planning. Significant associations were found between knowledge level and variables such as education, occupation, husband's occupation, income, and number of children.

**Conclusion:** The study concluded that most women had only moderate knowledge regarding unmet needs of family planning. The findings highlight the importance of health education and awareness programmes to improve family planning knowledge and utilization among married women.

## **Introduction**

India is one of the most populous countries in the world, with a population of approximately 1.44 billion. Rapid population growth continues to pose challenges to healthcare systems and socioeconomic development. Family planning programs have been implemented since 1951 to address this issue and promote the small family norm. Family planning plays a vital role in controlling population growth and improving maternal and child health. Despite ongoing efforts, a considerable number of women do not adopt contraceptive methods during their reproductive

years. This indicates a gap in awareness and accessibility, particularly regarding unmet needs for family planning.

### **Need for the Study**

Family planning is globally recognized as a cornerstone of reproductive health and sustainable development. According to international estimates, approximately 257 million women worldwide who wish to avoid pregnancy are not using effective contraceptive methods. This leads to around 121 million unintended pregnancies annually, contributing to unsafe abortions, maternal mortality, and child health issues.

Addressing unmet needs for family planning is essential for achieving Sustainable Development Goals, particularly those related to health and gender equality. Therefore, assessing knowledge among women is crucial to improving utilization and outcomes.

### **Review of Literature**

A study by Sharma et al. (2019) conducted among 600 married women in Uttar Pradesh revealed that although awareness of contraceptive methods was relatively high, actual usage remained low. Factors such as lack of spousal communication, fear of side effects, and sociocultural influences were identified as barriers to contraceptive use. This highlights the gap between knowledge and practice.

### **Statement of the Problem**

A study to assess the knowledge on unmet needs of family planning among married women of reproductive age attending postnatal/under five clinics at selected PHC, Puducherry

### **Objectives**

1. To assess the level of knowledge on unmet needs of family planning among married women of reproductive age attending postnatal/under-five clinics.
2. To determine the association between knowledge levels and selected demographic variables.

### **Operational Definitions**

- **Unmet Need of Family Planning:** Condition where women wish to delay or avoid pregnancy but are not using contraception.
- **Family Planning:** Voluntary use of methods to space or limit childbirth.
- **Married Women of Reproductive Age:** Women aged 18–49 years who are currently married.

### **Assumptions**

- Women attending clinics may lack adequate counseling on contraceptive methods.
- Sociocultural factors, partner influence, and lack of awareness contribute to non-utilization.

- Knowledge levels vary among women.
- Poor knowledge may lead to improper or non-use of contraceptives.

## **Methodology**

### **Research Approach and Design**

A quantitative approach with a descriptive research design was used.

### **Setting**

Postnatal/under-five clinic at a selected PHC, Puducherry.

### **Population and Sample**

- Population: Married women aged 18–49 years
- Sample Size: 100 participants
- Sampling Technique: Simple random sampling

### **Data Collection Tools**

A structured interview schedule including:

- Socio-demographic data
- Reproductive history checklist
- Knowledge questionnaire
- Unmet need assessment scale

### **Data Collection Procedure**

Data were collected from a selected Primary Health Centre in Puducherry after obtaining formal approval from the Institutional Ethics Committee and permission from the hospital authorities. The purpose of the study was clearly explained to the participants, and informed consent was obtained prior to data collection. A total of 100 married women of reproductive age (18–49 years) attending the postnatal/under-five clinic, who met the inclusion criteria, were selected using a systematic random sampling technique. Data were gathered using a structured interview schedule comprising socio-demographic details, a reproductive history checklist, a knowledge scale on family planning, and an unmet need assessment scale. The information collected was recorded immediately to ensure accuracy and completeness. Confidentiality of the participants' responses was strictly maintained, and counselling on family planning methods was provided upon request.

### **Organization of Data**

- Section A: Description of the demographic variables.
- Section B: Assess the level of knowledge on unmet needs of family planning among married women of reproductive age at postnatal/under five clinics.
- Section C: Evaluate level of knowledge on unmet needs of family planning among married women of reproductive age at postnatal/under five clinics.

- Section D: Association between the level of knowledge on unmet needs of family planning among married women of reproductive age at postnatal/under five clinic with selected demographic variable.

## **Results**

The study findings revealed that 29% of women had inadequate knowledge, 58% had moderate knowledge, and only 13% had adequate knowledge. The results also showed a significant association between the level of knowledge and selected demographic variables, including education, occupation, husband’s occupation, income, and number of children. These findings suggest that socio-economic and educational factors play an important role in determining women’s knowledge levels, highlighting the need for targeted educational and awareness interventions.

## **Discussion**

The findings of the study revealed that most married women had a moderate level of knowledge regarding unmet needs of family planning, with a smaller proportion having inadequate or adequate knowledge. This indicates that although awareness exists, it is not sufficient for proper utilization of family planning services. The study also found a significant association between knowledge levels and selected demographic variables such as education, occupation, husband’s occupation, income, and number of children. This suggests that socio-economic and educational factors strongly influence women’s understanding of family planning. These findings are consistent with previous studies which report that lack of education, limited autonomy, and socio-cultural barriers affect contraceptive knowledge and use. The results highlight the need for strengthening counselling services and targeted health education at the primary healthcare level to bridge the knowledge gap and reduce unmet needs for family planning.

## **Conclusion**

The study concluded that most married women attending the selected PHC had a moderate level of knowledge regarding family planning. Only a small proportion demonstrated adequate understanding. Key predictors of knowledge included education, occupation, and number of children. There is a need to strengthen health education and counselling services at primary healthcare levels to improve awareness and reduce unmet needs for family planning.

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## AI-ENHANCED STETHOSCOPE

**P. Manimegalai**

Department of Obstetrics and Gynecology,  
Sri Manakula Vinayagar Nursing College (SMVNC), Puducherry

### 1. Digital Sound Amplification

#### Technical Specifications:

- **Microphone Sensitivity:** High-fidelity, with a frequency range of 20 Hz to 20,000 Hz.
- **Amplification Levels:** Adjustable from 0 to 40 dB.
- **Power Source:** Rechargeable lithium-ion battery with a life of up to 12 hours of continuous use.
- **Materials:** High-grade stainless steel for the chest piece and medical-grade silicone for tubing.

### 2. Noise Reduction

#### Technical Specifications:

- **Algorithm:** AI-based adaptive filtering capable of distinguishing between patient sounds and ambient noise.
- **Latency:** Less than 10 ms processing delay.
- **Noise Reduction Level:** Up to 30 dB reduction in ambient noise.
- **Materials:** Noise-isolating earpieces made from soft, hypoallergenic silicone.

### 3. Real-Time Analysis:

#### Technical Specifications:

- **Processor:** Dual-core ARM Cortex-M4 for real-time data processing.
- **AI Software:** Proprietary machine learning algorithms trained on a vast dataset of heart and lung sounds.
- **Output:** Visual indicators (LED) and auditory feedback through earpieces.
- **Connectivity:** Bluetooth 5.0 for data transfer to mobile devices or computers.

### 4. Connectivity to Electronic Health Records (EHR):

#### Technical Specifications:

- **Interface:** Secure API for integration with popular EHR systems.
- **Data Transfer Rate:** Up to 2 Mbps.
- **Encryption:** End-to-end encryption to ensure patient data security.
- **Compatibility:** Compatible with both Android and iOS platforms.

## AI-Enhanced Stethoscope Diagram

### Chest Piece:

- **Microphone Array:** Located within the chest piece, capturing high-quality sound.
- **Digital Display:** Small screen showing real-time analysis results and system status.
- **Control Buttons:** Touch-sensitive buttons for power, amplification control, and menu navigation.

### Chest Piece:

The AI-Enhanced Stethoscope combines traditional stethoscope design with advanced AI capabilities, enhancing diagnostic accuracy and efficiency. The chest piece is ergonomically designed, integrating high-quality sound capture, real-time analysis, and user-friendly controls, making it a valuable tool for healthcare professionals.



### Tubing:

- **Noise-Isolating Material:** Medical-grade silicone tubing designed to minimize external noise interference.
- The medical-grade silicone tubing of the AI-Enhanced Stethoscope is engineered for superior sound clarity and comfort. Its noise-isolating properties ensure that external noise is minimized, allowing for precise auscultation. The flexible and durable design enhances the usability and longevity of the stethoscope, making it a reliable tool for healthcare professionals.

### Earpieces:

- **Comfortable Design:** Ergonomically designed earpieces for extended wear, with noise isolation features.
- The earpieces of the AI-Enhanced Stethoscope offer a comfortable, snug fit for extended wear, ergonomic design and soft, hypoallergenic silicone material. The noise isolation features ensure a clear and focused audio signal, enhancing the accuracy and reliability of the auscultation process. The seamless connection to the tubing and the modern, high-tech design makes these earpieces an essential component of the advanced stethoscope.



### Control Unit:

- **Processor and AI Module:** Embedded within the chest piece for real-time sound analysis.
- **Battery Compartment:** Easily accessible, with a rechargeable lithium-ion battery.
- The control unit of the AI-Enhanced Stethoscope integrates advanced technology within the chest piece, ensuring real-time sound analysis and efficient functionality. The sleek and modern design, coupled with high-quality materials, provides a professional and ergonomic solution for healthcare providers, enhancing diagnostic accuracy and user experience.



### Bluetooth Transmitter:

- Located within the control unit, enabling seamless data transfer to EHR systems.
- The connectivity module of the AI-Enhanced Stethoscope, with its integrated Bluetooth transmitter, ensures efficient and secure data transfer to Electronic Health Record systems. The high-tech, professional design enhances the functionality of the stethoscope, making it a valuable tool for modern healthcare environments.



### Patent Certificate



## **A STUDY TO EVALUATE THE EFFECTIVENESS OF ART THERAPY ON IMPROVING LIFE SKILLS AND SELF-ESTEEM AMONG PRESCHOOL CHILDREN AT SELECTED SCHOOLS, PUDUCHERRY**

**Hemamalini S**

College of Nursing, East Coast Institute of Medical Sciences, Puducherry, 605010

### **Abstract**

**Background:** Early childhood is a crucial period for the development of life skills and self-esteem, which are essential for emotional, social, and psychological well-being. Preschool children today face various psychosocial challenges that may affect their confidence and interpersonal skills.

**Aim:** The study aimed to evaluate the effectiveness of art therapy on life skills and self-esteem among preschool children at selected schools in Puducherry.

**Methodology:** A quasi-experimental pre-test and post-test control group design was adopted. Ninety preschool children were selected using convenience sampling technique, with 45 in the experimental group and 45 in the control group. Pre-test assessment of life skills and self-esteem was conducted using standardized observational tools. The experimental group received structured art therapy sessions (painting and drawing activities) for one hour daily over a period of three weeks, while the control group followed routine school activities. Post-test assessment was conducted after completion of the intervention.

**Results:** The findings revealed a significant improvement in post-test life skills and self-esteem scores among preschool children in the experimental group compared to their pre-test scores.

**Conclusion:** The study concluded that art therapy is an effective, child-friendly intervention for improving life skills and self-esteem among preschool children. Integrating structured art therapy into preschool education can promote holistic psychosocial development.

### **Introduction**

Early childhood (3–6 years) is a crucial period for developing life skills and self-esteem, which form the foundation for a child's emotional, social, and cognitive growth. According to the World Health Organization, core life skills such as self-awareness, communication, and coping abilities are essential for positive mental health. Art therapy, through creative and expressive activities, provides a child-friendly approach to enhance emotional expression, confidence, and social interaction. Therefore, this study aims to evaluate the effectiveness of art therapy in improving life skills and self-esteem among preschool children in Puducherry.

### **Objectives**

- To assess the pre-test level of life skills and self-esteem among preschool children.
- To evaluate the effectiveness of art therapy on improving life skills and self-esteem among preschool children.

- To associate the pre-test levels of life skills and self-esteem with selected demographic variables.

### Methodology

A quantitative research approach with a quasi-experimental pre-test and post-test control group design was adopted to evaluate the effectiveness of art therapy on life skills and self-esteem among preschool children. The study was conducted at Government Primary School, Kirumampakkam and Government Primary School, Pillayarkuppam. The independent variable was Art Therapy, while the dependent variables were life skills and self-esteem; demographic factors acted as extraneous variables. The target population included preschool children in Government Primary Schools, Puducherry, and the accessible population comprised children from the selected schools. Using convenience sampling, 90 children (45 experimental, 45 control) were selected based on power analysis (95% confidence, 80% power) with 20% attrition considered.

Inclusion criteria included preschool children present during data collection with parental consent; children with severe illness or developmental disorders were excluded. Data were collected using the Preschool Life Skills Assessment – Observational Checklist developed by Gregory P. Hanley *et al.* (2007) and the Early Childhood Self-Esteem Scale modeled after Peter Lauster. The intervention consisted of structured painting and drawing sessions conducted one hour daily for three weeks, focusing on emotional expression, social interaction, cooperation, and confidence-building activities. Pre-test and post-test assessments were conducted for both groups. Tool validity was established through expert review, and reliability was confirmed using Cronbach’s alpha in a pilot study. Data were analyzed using descriptive statistics (mean, frequency, standard deviation) and inferential statistics (paired t-test and chi-square test). Ethical clearance and parental informed consent were obtained prior to the study.

### Results

**Table 1: Frequency and percentage distribution of pre and post test of like skill and self-esteem scores among preschool children**

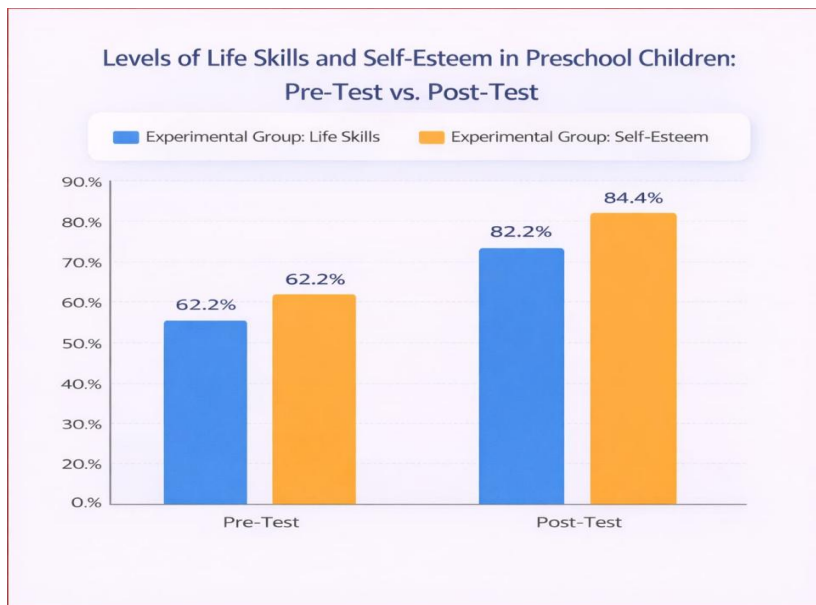
S. No	Group	Pre-test Findings	Post-test Findings	Interpretation
Life Skills	Experimental	Majority in Moderate (51.1%), Low (37.8%), very few High (2.2%)	Moderate increased (64.4%), High increased (26.7%), Very Low reduced to 0%	Significant improvement after intervention
Self-Esteem	Experimental	Majority in Moderate (55.6%), Low (26.7%), High (17.8%)	High increased (53.3%), Low reduced (4.4%)	Marked improvement after intervention

The demographic distribution of preschool children revealed that in the experimental group, 36 (80%) were aged 6 years and 25 (55.6%) were male. In the control group, 35 (77.8%) were aged 6 years and 27 (60%) were female. Majority of fathers had secondary education (51.1% in experimental group and 37.8% in control group). Most of the families belonged to joint family type and semi-urban residence in both groups.

The calculated paired ‘t’ test value for life skills in the experimental group was 75.015 and for self-esteem was 237.757 with the p value of 0.05, which indicates a statistically highly significant difference between pre-test and post-test scores. Hence, the findings show that art therapy was highly effective in improving life skills and self-esteem among preschool children.

**Table 2: Effectiveness of art therapy on life skills and self-esteem among preschool children in the experimental group**

Psychosocial Variable	Test	Mean $\pm$ SD	Paired 't' value	'p' value
Life Skills	Pre-test	75.01 $\pm$ 10.4	75.015	0.000*** (HS)
	Post-test	257.11 $\pm$ 9.1		
Self-Esteem	Pre-test	50.12 $\pm$ 7.2	237.757	0.000*** (HS)
	Post-test	237.75 $\pm$ 6.8		



**Figure 1: Levels of life skills and self esteem in preschool students (Pre vs. Post Test)**

## Discussion

The present study included 30 children, all (100%) aged 5–6 years and studying in UKG. Most participants were females (60%), belonged to nuclear families (66.7%), and were first-born children (53.3%). Regarding exposure to structured activities, 60% had no prior experience, while 40% had previous exposure.

In the pre-test, half of the children (50%) had moderate life skills, while 30% had low and 20% had high levels. After intervention, there was a notable improvement, with 60% achieving high life skills and only 13.3% remaining in the low category. Similarly, self-esteem improved from predominantly moderate levels in the pre-test (53.3%) to high levels in the post-test (63.3%), indicating the effectiveness of the intervention.

These findings are supported by George *et al.* (2023), who reported significant improvements in self-esteem and social skills after structured art therapy sessions among preschool children. Likewise, Ramesh and Priya (2022) found that art-based interventions significantly improved life skills scores in the experimental group. Overall, the results suggest that structured activity-based interventions effectively enhance both life skills and self-esteem in preschool children.

### **Conclusion**

The study findings revealed that art therapy was effective in improving life skills and self-esteem among preschool children. Significant improvement was observed in the post-test scores compared to the pre-test.

### **Recommendations**

- Further studies with larger samples are recommended.
- Long-term studies can assess sustained effects.
- Art therapy can be included in preschool programs to enhance child development.

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## **A STUDY TO ASSESS THE EFFECTIVENESS OF HANDS-ON SKILL TRAINING PROGRAM ON CHOKING AMONG MOTHERS OF UNDER-FIVE CHILDREN IN SELECTED AREAS, PUDUCHERRY**

**Sangeetha**

College of Nursing, East Coast Institute of Medical Sciences, Puducherry, 605010

### **Abstract**

**Background:** Choking is a life-threatening emergency among under-five children. Lack of knowledge and practical skill regarding its management among mothers can increase the risk of complications and death.

**Aim:** To evaluate the effectiveness of a hands-on skill training program on knowledge and skill regarding choking among mothers of under-five children in selected areas of Puducherry.

**Methodology:** A quasi-experimental one group pre-test and post-test design was adopted. Fifty mothers of under-five children were selected by convenience sampling from Koodapakkam (Center 1, Center 2, Center 3) and Poraiyur. Knowledge was assessed using a structured questionnaire, and skill was assessed using an observational skill checklist before and after the hands-on skill training program. The post-test was conducted after the intervention to determine the effectiveness of the program in improving both knowledge and practical skill.

**Results:** In the pre-test, the majority of mothers, 22 (44%), had average knowledge regarding choking first aid, 18 (36%) had poor knowledge, and only 10 (20%) had good knowledge. Following the hands-on skill training program, there was a marked improvement in knowledge levels. In the post-test, 35 (70%) mothers demonstrated good knowledge, 12 (24%) had average knowledge, and only 3 (6%) had poor knowledge. The mean pre-test knowledge score was 8.4, which increased to 16.8 in the post-test. The calculated paired 't' test value was 14.62 with a p-value of 0.001, indicating a statistically highly significant improvement in knowledge after the hands-on skill training program.

**Conclusion:** The findings of the study demonstrated that the hands-on skill training program is effective in improving knowledge regarding choking among mothers of under-five children.

### **Introduction**

Choking due to foreign body airway obstruction is a leading cause of accidental injury and death in young children. Globally, choking is responsible for tens of thousands of child deaths each year, with children under five years old accounting for the vast majority of cases. Over 75% of choking incidents occur in children younger than 3 years, and about 95% of choking deaths in children occur in those aged four and under. In India, an estimated 50,000 pediatric choking cases occur annually, many of which happen at home and involve children under five.

Mothers are usually the primary caregivers and are most likely to witness and respond to choking incidents. However, many lack adequate knowledge and practical first aid skills to manage choking effectively. Hands-on skill training can improve mothers' confidence and ability to perform life-saving techniques promptly, reducing the risk of serious complications or death.

### **Statement of the Problem**

A study to assess the effectiveness of hands-on skill training program on choking among mothers of under-five children in selected areas, Puducherry

### **Objectives**

- To assess the pre-test level of knowledge regarding choking among mothers of under-five children.
- To assess the post-test level of knowledge regarding choking among mothers of under-five children.
- To evaluate the effectiveness of a hands-on skill training program by comparing the difference between pre-test and post-test knowledge scores among mothers of under-five children.

### **Methodology**

The study used a quantitative approach with a quasi-experimental one-group pre-test and post-test design. It was conducted in selected areas of Puducherry: Koodapakkam (Center 1, Center 2, Center 3) and Poraiyur. Fifty mothers of under-five children were selected using convenience sampling. Ethical approval and informed consent were obtained. Demographic data and pre-test knowledge were collected using a structured questionnaire based on AHA guidelines. A hands-on skill training program on choking management was administered with demonstrations and practice. Post-test knowledge was assessed after the intervention, and effectiveness was analyzed using a paired t-test.

### **Results**

The demographic distribution of the 50 mothers showed that the majority, 20 (40%), were in the age group of 26–30 years. Regarding occupation, 30 (60%) were homemakers. In terms of family type, 31 (62%) belonged to nuclear families. Concerning previous knowledge, 31 (62%) had no prior knowledge regarding choking first aid, and 40 (80%) had not attended any first aid training program.

The mean pre-test knowledge score was  $8.4 \pm 2.1$ , and the mean post-test knowledge score was  $16.8 \pm 1.5$ . The calculated paired t-test value was 14.62 with a p-value of 0.001, indicating a statistically highly significant improvement in knowledge after the hands-on skill training program.

### Interpretation

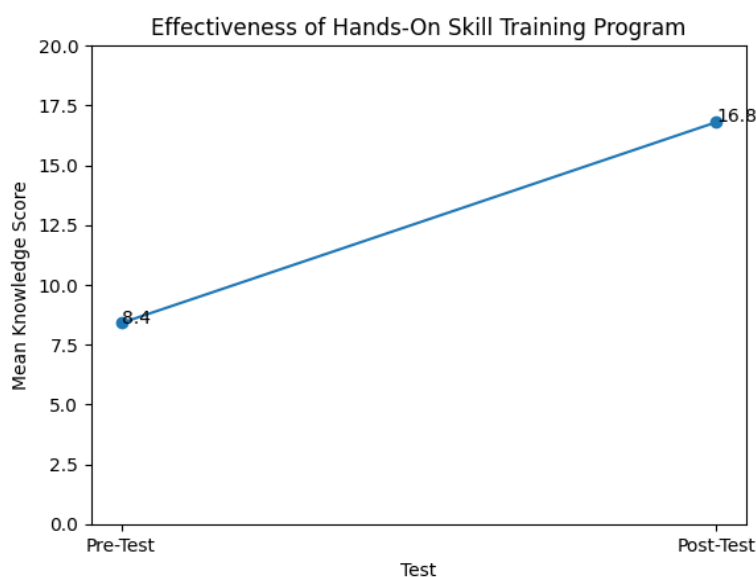
The findings indicate that the hands-on skill training program was effective in improving knowledge regarding choking among mothers of under-five children. Therefore, the research hypothesis was accepted.

**Table 1: Frequency and Percentage Distribution of Pre-Test and Post-Test Knowledge Scores on Choking**

Knowledge Level	Pre-Test Frequency (f)	Pre-Test Percentage (%)	Post-Test Frequency (f)	Post-Test Percentage (%)
Poor Knowledge	18	36	3	6
Average Knowledge	22	44	12	24
Gsood Knowledge	10	20	35	70
Total	50	100	50	100

**Table 2: Effectiveness of Hands-On Skill Training Program on Knowledge Regarding Choking among Mothers of Under-Five Children**

Test	Mean Score	Standard Deviation (SD)	Mean Difference	Paired t-test	p-value	Interpretation
Pre-Test	8.4	2.1				Average knowledge
Post-Test	16.8	1.5	8.4	14.62	0.001	Statistically significant improvement; good knowledge



## Discussion

The present study was conducted among 50 mothers of under-five children. The demographic distribution showed that the majority, 20 (40%), were in the age group of 26–30 years. Regarding occupation, most mothers 30 (60%) were homemakers, while the remaining were employed. In terms of family type, 31 (62%) belonged to nuclear families.

Concerning previous knowledge, 31 (62%) mothers had no prior knowledge regarding choking first aid, and 40 (80%) had not attended any first aid training program.

The findings further revealed that the mean pre-test knowledge score was  $8.4 \pm 2.1$ , which increased to  $16.8 \pm 1.5$  in the post-test. The calculated paired t-test value was 14.62 with a p-value of 0.001, indicating a statistically highly significant improvement in knowledge after the hands-on skill training program.

These findings suggest that the hands-on skill training program was effective in improving knowledge regarding choking among mothers of under-five children. Hence, the research hypothesis was accepted.

In the pre-test, the majority of mothers 18 (36%) had poor knowledge, 22 (44%) had average knowledge, and 10(20%) had good knowledge regarding choking. In the post-test, the majority 35(70%) had good knowledge, 12 (24%) had average knowledge, and only 3(6%) had poor knowledge.

The mean pre-test knowledge score was  $8.4 \pm 2.1$ , and the mean post-test knowledge score was  $16.8 \pm 1.5$ . The calculated paired 't' test value was 14.62 with a p-value of 0.001, indicating a statistically highly significant improvement in knowledge after the hands-on skill training program.

The findings of the present study are supported by similar quasi-experimental studies conducted among mothers of under-five children, which reported a significant increase in knowledge scores following structured first aid training on choking management. These findings confirm that hands-on skill training is effective in improving mothers' knowledge regarding choking management.

Ramesh *et al.* (2022) conducted a quasi-experimental pre-test and post-test study among 60 mothers of under-five children to assess the effectiveness of a structured teaching program on choking first aid. The mean pre-test knowledge score was  $8.3 \pm 2.4$ , which increased to  $16.5 \pm 1.8$  in the post-test. The paired 't' value was 13.92 ( $p < 0.001$ ), indicating a statistically highly significant improvement in knowledge after the intervention. The study also reported that mothers' confidence in handling choking emergencies improved significantly. These findings support the importance of hands-on skill training programs for caregivers.

## Conclusion

The study demonstrated that the hands-on skill training program was effective in improving knowledge regarding choking among mothers of under-five children in Puducherry. Pre-test scores showed poor to average knowledge, while post-test scores showed a significant improvement. The paired t-test ( $t = 14.62$ ,  $p = 0.001$ ) confirmed the improvement was statistically highly significant.

## Recommendations

Further studies with larger samples and varied settings are recommended to generalize the findings. Comparative studies on different training methods can be conducted. Incorporating regular hands-on skill sessions in maternal and child health programs can improve mothers’ confidence and preparedness in managing choking emergencies.

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# A STUDY TO ASSESS THE LEVEL OF PERCEPTION ON PERCEIVED BARRIERS AND CHALLENGES AMONG NURSING STUDENTS AT SELECTED NURSING COLLEGES, PUDUCHERRY

Savundary S

College of Nursing, East Coast Institute of Medical Sciences, Puducherry, 605010

## Abstract

**Background:** Clinical learning is an essential component of nursing education that helps students develop professional competence and confidence. However, nursing students often experience various academic and clinical barriers that may affect their learning outcomes and professional growth.

**Aim:** To assess the level of perception on perceived barriers and challenges among II Year B.Sc. Nursing students and to determine the association between perception levels and selected demographic variables.

**Methods:** A non-experimental descriptive research design was adopted. The study was conducted among 60 II Year B.Sc. Nursing students at Indirani College of Nursing, Puducherry, selected through convenience sampling technique. Data were collected using a structured demographic questionnaire and the Clinical Learning Environment Inventory (CLEI). Descriptive and inferential statistics were used for data analysis.

**Results:** The findings revealed that 38(63.3%) students had a moderate level of perception, 12(20%) had high perception, and 10(16.7%) had low perception regarding perceived barriers and challenges. Domain-wise analysis showed the highest mean score in Task Orientation ( $25.6 \pm 4.0$ ) and the lowest in Innovation ( $21.8 \pm 3.9$ ). A statistically significant association was found between level of perception and previous academic performance ( $\chi^2 = 6.21, p < 0.05$ ) as well as participation in academic/co-curricular activities ( $\chi^2 = 5.84, p < 0.05$ ).

**Conclusion:** The study concludes that most students experience a moderate level of clinical learning challenges. Strengthening academic support and incorporating innovative teaching strategies may enhance the clinical learning experience of nursing students.

## Introduction

Nursing education plays a vital role in preparing competent healthcare professionals. However, nursing students often experience multiple academic, clinical, personal, and institutional barriers that may affect their learning outcomes and professional development. Globally, studies report that 30–50% of nursing students experience moderate to high academic stress, and nearly 25–40% face

clinical learning challenges such as inadequate supervision and fear of making mistakes. In India, research indicates that approximately 35–45% of nursing students report perceived barriers related to workload, communication gaps, and lack of support systems. Understanding students’ perception of these barriers is essential to improve the quality of nursing education, enhance student satisfaction, and reduce attrition rates. Therefore, the present study aims to assess the level of perception on perceived barriers and challenges among nursing students at selected nursing colleges in

### **Objectives**

- To assess the level of perception on perceived barriers and challenges among nursing students
- To associate the levels of perception on perceived barriers and challenges among nursing students with selected demographic variables.

### **Methodology**

A non-experimental descriptive research design was adopted to assess the level of perception on perceived barriers and challenges among nursing students. The study was conducted among 60 II - year B.Sc. Nursing students, selected by convenience sampling technique at Indirani College of Nursing, Puducherry. The purpose of the study was explained to the students and informed consent was obtained prior to data collection. The data were collected after obtaining ethical clearance from the Institutional Research Committee and permission from the concerned authority of the college. The socio-demographic data were collected by using a structured questionnaire and the level of perception on perceived barriers and challenges was assessed using a standardized tool Clinical Learning Environment Inventory (CLEI). The data collection procedure was carried out within the stipulated period, and confidentiality of the participants was maintained throughout the study.

### **Results**

The demographic distribution of nursing students showed that 38(63.3%) were aged 19 years and 22(36.7%) were 18 years. Majority 48(80%) were female and 12(20%) were male. Regarding place of residence, 36(60%) were from rural areas and 24(40%) from urban areas. Most 40(66.7%) belonged to nuclear families. Nearly 28(46.7%) had a monthly family income between ₹10,000–₹20,000. With regard to previous academic performance, 35(58.3%) had secured 60–75% marks. Majority 42(70%) reported parents as the main source of financial support. Most students 37(61.7%) participated in academic/co-curricular activities.

The overall level of perception on perceived barriers and challenges among nursing students revealed that 10(16.7%) had low perception, 38(63.3%) had moderate perception, and 12(20%) had high perception. The findings indicate that the majority of nursing students had a moderate

level of perception regarding perceived barriers and challenges in the clinical learning environment.

**Table 1: Frequency and Percentage Distribution of Level of Perception on Perceived Barriers and Challenges among Nursing Students (N = 60)**

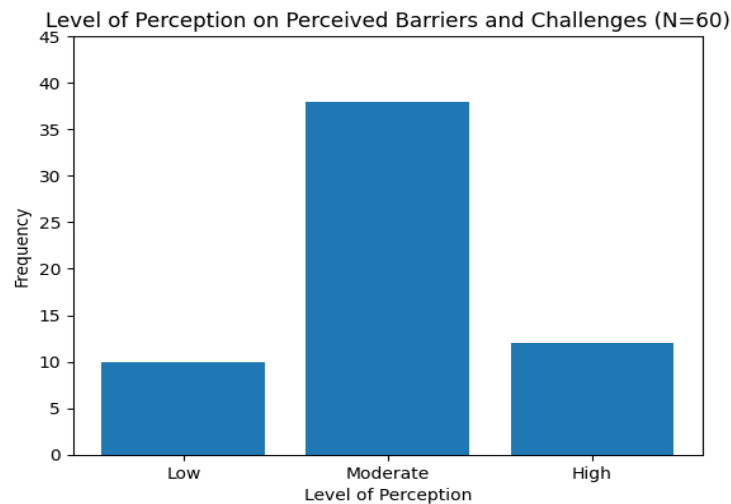
Level of Perception	Frequency (N)	Percentage (%)
Low	10	16.7
moderate	38	63.3
high	12	20.0
Total	60	100

**Table 2: Domain-wise Mean and Standard Deviation of CLEI among Nursing Students (N = 60)**

S. No	Domain	Max Score	Mean	SD
1	Personalization	35	23.4	4.2
2	Student Involvement	35	24.1	3.8
3	Task Orientation	35	25.6	4.0
4	Innovation	35	21.8	3.9
5	Individualization	35	22.5	4.3
6	Satisfaction	35	24.8	3.7
	Overall Score	210	142.2	18.6

**Table 3: Association between Level of Perception and Selected Demographic Variables among Nursing Students (N = 60)**

S. No	Demographic Variable	$\chi^2$ Value	df	p Value
1	Age	1.82	2	0.40
2	Gender	2.11	2	0.34
3	Place of Residence	1.67	2	0.43
4	Type of Family	2.54	2	0.28
5	Monthly Family Income	3.12	4	0.53
6	Previous Academic Performance	6.21	2	0.04
7	Participation in Academic/Co-curricular Activities	5.84	2	0.05
8	Hours Spent in Clinical Practice per Week	2.36	2	0.30
9	Educational Qualification of Parents	3.48	4	0.48
10	Source of Financial Support	1.95	2	0.37
11	Type of Clinical Area Most Frequently Posted	4.02	4	0.40



## Discussion

The present study revealed that the majority of II Year B.Sc. Nursing students 38(63.3%) had a moderate level of perception regarding perceived barriers and challenges in the clinical learning environment, while 12(20%) had high perception and 10(16.7%) had low perception. This indicates that although students are reasonably adapting to clinical postings, certain academic and clinical challenges still persist.

Domain-wise analysis showed that the highest mean score was observed in Task Orientation ( $25.6 \pm 4.0$ ), indicating that students perceived clinical activities as well-structured and organized. The lowest mean score was found in Innovation ( $21.8 \pm 3.9$ ), suggesting a need for improvement in creative teaching methods and innovative supervision strategies in the clinical area.

The study also found a statistically significant association between level of perception and previous academic performance ( $\chi^2 = 6.21, p < 0.05$ ) and participation in academic/co-curricular activities ( $\chi^2 = 5.84, p < 0.05$ ). This implies that academically stronger and actively involved students tend to perceive fewer barriers in the clinical learning environment.

The study was supported by Papastavrou *et al.* (2016) conducted a study assessed nursing students’ perceptions of the clinical learning environment using the Clinical Learning Environment Inventory (CLEI). The findings revealed that the majority of students reported a moderate level of satisfaction and perception, with higher scores in task orientation and student involvement domains. The study concluded that structured clinical supervision and supportive mentorship significantly improve students’ learning experiences.

## Conclusion

The study concluded that the majority of II Year B.Sc. Nursing students had a moderate level of perception regarding perceived barriers and challenges in the clinical learning environment. Academic performance and participation in activities showed significant association with perception levels. The findings indicate the need to enhance innovative teaching and academic support in clinical areas.

## Recommendations

- Innovative and student-centered teaching strategies may be incorporated in clinical settings to improve learning experiences.
- Mentorship and academic guidance programs can be strengthened to support students facing clinical challenges.
- Workshops and orientation programs may be organized to improve student confidence and participation in clinical areas.

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## **A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE REGARDING FIRST AID MANAGEMENT OF DOG BITE AMONG ADULTS IN SELECTED COMMUNITY SETTING AT VILLUPURAM**

**Deepa M**

Mailam Nursing College, Mailam, Tamil Nadu 604304

### **Abstract**

**Background:** Dog bites are a major public health concern and can lead to serious complications like infections and rabies. Lack of knowledge about first aid can delay treatment and increase risks.

**Aim:** To assess knowledge regarding first aid management of dog bites among adults.

**Methods:** A pre-experimental one-group pre-test design was used among 50 adults selected through convenience sampling. Data were collected using a structured questionnaire and analyzed using descriptive and inferential statistics.

**Results:** Most participants had inadequate to moderate knowledge, with no one having adequate knowledge. No significant association was found with demographic variables.

**Conclusion:** Knowledge regarding first aid management of dog bites is insufficient, highlighting the need for community health education to prevent complications like rabies.

**Keywords:** Dog Bite, First Aid, Knowledge, Adults, Rabies Prevention.

### **Introduction**

Rabies is acute viral encephalitis transmitted by exposure to rabid animals. Zoonotic disease one of the most dreaded diseases. When infection sets, in rabies invariably fatal. On the other hand, rabies is a vaccine preventable disease, especially when vaccination is combined with immunoglobulins. The breed of dog most likely to bite and attack humans and other animals is the pit bull. A census that pit pulls were responsible for at least 346 deaths in the united status in the past 15 years. Dog bite can cause several complications. These include infections, rabies, nerve or muscle damage and more.

### **Significance and need for the Study**

Rabies remains a significant public health concern worldwide, with an estimated 59,000 human deaths occurring annually in more than 150 countries, and around 4.5 million people being bitten by dogs each year. In India, the burden is particularly high, as it accounts for the highest number of human rabies deaths globally, with approximately 7,000 to 10,000 cases reported every year. Additionally, dog bite incidents in India have shown a 26.5% increase, rising from 2.18 million cases in 2022 to 2.75 million cases in 2023. In Tamil Nadu, about 8.83 lakh dog bite cases were reported in 2022, along with 121 rabies-related deaths between 2018 and 2022. Although a

declining trend in rabies deaths has been observed in the state, it is still far from achieving the goal of zero deaths due to rabies.

### **Statement of Problem**

A descriptive study to assess the first aid management for dog bite among adults in selected community setting at Villupuram.

### **Objectives**

- To assess the level of knowledge regarding first aid management for dog bite among the adult in selected community setting.
- To find out the association between knowledge regarding first aid management among adult with their selected demographic variable

### **Operational Definition**

**Assess:** In this study it refers to the measure to the level of knowledge Among adult on dog bite using valid questions

**Knowledge:** It refers to the capacity of understanding the subject information Regarding dog bite.

**First aid management:** It refers to medical attention that is usually administered Immediate care of after the injury

**Dog bite:** A dog bite can lead to rabies or tetanus infection. Immediate medical care is required when the bite is from a dog that has, or might have rabies. Although dog attacks can include knock down and scratches.

**Adult:** In this study about between the ages of above 18 years old.

### **Review of Literature**

Section A: Review related to assess knowledge regarding dog bite (5 Literature)

Section B: Review related to management and treatment of dog bite (5 Literature)

### **Methodology**

The study adopts a pre-experimental one-group pre-test research design and is conducted at the Mugaiyur Primary Health Center. The population for the study includes all adults residing in Villupuram district, while the sample consists of adults living in Mugaiyur village. A total of 50 participants are included in the study, selected using a convenient sampling technique. Data is collected through a self-structured knowledge questionnaire, and the collected data is analyzed and interpreted using descriptive and inferential statistical methods.

### **Sample criteria:**

### **Inclusion criteria:**

- Who are willing to participate in the study

- Adult who can understand Tamil or English

**Exclusion criteria:**

- Adult absent at the time of data collection
- Who are not willing to participate in the study

**Description of Tool**

The total score of the scale is so which divided into: The maximum score was 25. The score were ranged as follows:

Level of Knowledge	Score	Percentage
Adequate knowledge	17 – 100	71%
Moderate knowledge	36 -70	36 – 70 %
Adequate below	35	>35

**Data Analysis and Interpretation**

**Table 1: Frequency and Percentage wise Distribution of Demographic Variables among adult.**

SI. No	Demographic Variables	Frequency (f)	Percentage (%)
1.	<b>Age</b>		
	18-25 year	19	63.3%
	25-30 year	7	23.3%
	30-35 year	4	13.3%
2.	<b>Sex</b>		
	Male	13	43%
	Female	17	57%
	Others	0	0%
3.	<b>Marital status</b>		
	Married	13	43%
	Unmarried	17	57%
4.	<b>Religion</b>		
	Hindu	30	100%
	Chirstian	-	-
	Muslim	-	-
5.	<b>Residence</b>		
	Rural	29	97%
	Urban	1	3%
6.	Types of family		

	Joint family	11	36.7%
	Nuclear family	19	63.3%
7.	<b>Educational status</b>		
	Primary	5	17%
	Higher secondary	15	50%
	Degree	10	33%
8.	<b>Monthly income of family</b>		
	Rs.5,000 – 10,000	11	37%
	Rs.11,000 – 15,000	15	50%
	Rs.15,000 -Above	4	13%
9.	<b>Diet pattern</b>		
	Vegetarian	2	6%
	Non- vegetarian	5	17%
	Both	23	77%
10	<b>Did you know first aid management dog bite</b>		
	Yes	13	43%
	No	17	57%

**Table 2: Level of knowledge regarding dog bite among adult before pre test.N=50**

Level of knowledge	Frequency (f)	Percentage (%)
Adequate knowledge	0	0%
Moderately adequate knowledge	15	50 %
Inadequate knowledge	15	50%

**Table 3: Association between the pre-test level of knowledge (first aid management of dog bite) among adult with their selected demographic variables**

S. No	Demographic Variable	Category	Adequate Knowledge n (%)	Moderate Knowledge n (%)	Inadequate Knowledge n (%)	df	$\chi^2$ Value	P Value
1	Age	18–25	0 (0)	8 (27)	11 (37)	2	2.621	0.269
		26–30	0 (0)	5 (17)	2 (7)			
		31–35	0 (0)	1 (3)	3 (10)			

2	Sex	Male	0 (0)	7 (23)	6 (20)	1	0.1358	0.713
		Female	0 (0)	8 (27)	9 (30)			
3	Marital Status	Married	0 (0)	4 (13)	9 (30)	1	1.889	0.170
		Unmarried	0 (0)	9 (30)	7 (23)			
4	Religion	Hindu	0 (0)	15 (50)	15 (50)	0	NaN	Constant
		Christian	0 (0)	0 (0)	0 (0)			
		Muslim	0 (0)	0 (0)	0 (0)			
5	Residence	Rural	0 (0)	14 (47)	15 (50)	1	0.91	0.34
		Urban	0 (0)	1 (3)	0 (0)			

\*P < 0.05 significant S – Significant, N.S – Not Significant

## Discussion

### **The first objective was to assess the pretest level of knowledge on first aid management of dog bite among adult.**

The study findings in the table 2, reveals that during pretest majority of the adult knowledge regarding first aid management of dog bite is 15(50%) of there were in Inadequate knowledge and 15(50%) of there were in moderately adequate knowledge.

The above findings were also supported by the study done by Tadele Kabeta *et al.* PLoS Negl Trop Dis.(2015). Almost all participants (99%) were aware that rabies was transmitted by the bite or lick of a rabid dog, however only 20.1% identified "germs" as the cause of disease prevented by avoiding dog bites (64.6%) and confining dogs (53.9%); fewer (41.7%) recognized vaccination of dogs/cats as an important preventive strategy

### **The second objective was to evaluate the management and treatment of dog bite among adult.**

The study findings in the table 3, reveals that the comparison mean and standard deviation of the level of knowledge regarding first aid management of dog bite among adult in pre test has increased. The mean value of pre test score is 9.8.

Uzma Rahim Khan *et al.* Injury (2023) Aug 2178 participants were included in the analysis. 715 (38.8%) were children less than 18 years old, and 1463 (61.2%) were adults over 18 years. A majority of the patients were males (1909, 87.7%). Results show that most dog bite injuries (2052, 94.2%) tend to occur outside the house by stray dogs biting without provocation. People aged 18 years and above (61.2%) and males (children: 84.6%, adults: 89.1%) tend to be bitten more often.

Lower limbs are most frequently bitten (children: 69.5%, adults: 85.8%). Free-roaming stray dogs (children: 73.4%, adults: 74.9%) were involved in reported biting cases

### **Conclusion**

The study concluded that there was a significant improvement in the level of knowledge regarding first aid management of dog bite among adults after the assessment. In the pre-test, half of the participants had inadequate knowledge while the remaining had moderately adequate knowledge, indicating a need for improved awareness. The findings suggest that many individuals lack complete understanding of appropriate first aid measures and preventive strategies for dog bite injuries. However, the post-assessment showed a positive improvement in knowledge levels, highlighting the effectiveness of education in enhancing awareness. Therefore, structured health education programs are essential to improve knowledge and promote timely and appropriate first aid management of dog bite cases in the community.

**Nursing Implications:** The present study can help the nurses to enrich their knowledge regarding first aid management of dog bite.

**Nursing Administration:** Nurse administrator can make necessary policies to implement the nursing care services regarding first aid management of dog bite

**Nursing Service:** The nurses working in the hospital and the community setting can understand the need for knowledge regarding first aid management of dog bite among adult.

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## **A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE AND ATTITUDE REGARDING CHICKEN POX AMONG MOTHERS OF UNDER-FIVE CHILDREN AT DEVATHANAM PETTAI, VILLUPURAM DISTRICT**

**M. Deepak**

Mailam Nursing College, Mailam, Tamil Nadu 604304

### **Abstract**

**Background:** Chicken pox is a contagious disease affecting children, and mothers play a key role in its prevention and care. Lack of knowledge and proper attitude may lead to complications.

**Aim:** To assess knowledge and attitude regarding chicken pox among mothers of under-five children.

**Methods:** A quantitative descriptive design was used among 50 mothers selected through convenience sampling. Data were collected using a structured questionnaire and attitude scale, and analyzed using descriptive and inferential statistics.

**Results:** Most mothers had moderate knowledge and a positive attitude. A significant association was found between knowledge and family income ( $p < 0.05$ ).

**Conclusion:** Although knowledge and attitude are generally adequate, there is a need for improved awareness through health education programs.

**Keywords:** Chicken Pox, Knowledge, Attitude, Mothers, Under-Five Children.

### **Introduction**

Chicken pox or varicella is a viral infectious disease characterized by different stages of rashes that may be accompanied by fever, malaise and vesicular skin lesions. It is caused by varicella zoster virus (VZV) which is a DNA virus. The incubation period of the varicella is from two to three weeks and is usually from 14-16 days.

### **Need for the Study**

At the global level, the World Health Organization estimates the annual burden of varicella (chickenpox) to be around 140 million cases, with approximately 4.2 million severe complications requiring hospitalization and about 4,200 deaths each year. In India, between January 2015 and April 2021, around 1,269 cases were reported, with 31 confirmed deaths, most of which occurred in the states of Bihar and Uttar Pradesh. At the state level, in Tamil Nadu, particularly in rural areas, an overall attack rate of 5.9% was observed, with higher rates among specific age groups: 15.9% among children under five years, 11.1% among school-aged children (5–15 years), and 24% among individuals aged 16 years and above. In Villupuram district, nearly 80 patients were affected by chickenpox during March and April 2021, indicating a notable local outbreak.

### Statement of a Problem

A descriptive study to assess the knowledge and attitude regarding chicken pox among mother of under five children at Devathanampettai Villupuram district.

### Objectives of the Study

- To assess the knowledge regarding chicken pox among mothers of under five children.
- To assess the attitude regarding chicken pox among mothers of under five children.
- To find out the association between the knowledge score with their selected demographic variables.

### Operational Definition

- **Assess:** In this study, assess refers to evaluation of knowledge regarding chicken pox among mother under five children.
- **Knowledge:** In this study, knowledge refers to the collecting of information about chicken pox.
- **Attitude:** In this study, attitude refers to the settled way of thinking or feeling about chicken pox.
- **Chicken pox:** Chicken pox or varicella is an infectious disease characterized by different stages of rashes that may be accompanied by fever, malaise and vesicular skin lesions.
- **Mothers under five children:** In this study, mothers under five children who are residing in the selected community area (Devathanampettai)

### Research Hypothesis

H1-There will be a significant association between the selected demographic variables and level of knowledge regarding chicken pox among mothers of under five children.

### Review of literature

- Literature related to the prevalence of chicken pox
- Literature related to the causes of chicken pox.
- Literature related to the management of chicken pox.
- Literature related to the knowledge regarding chicken Pox.
- Literature related to the attitude regarding chicken pox.

### Research Methodology

The study adopts a quantitative research approach with a descriptive research design. It is conducted in Devathanam Pettai, located in Villupuram district. The sample consists of 50 mothers of under-five children, and the participants are selected using a convenient sampling technique.

### **Inclusion Criteria**

- Mothers of under-five children in the selected community area, Devathanam Pettai
- Mothers who are willing to participate in the study
- Mothers who can understand Tamil or English

### **Exclusion Criteria**

- Mothers who do not know Tamil or English
- Mothers who are not residing in the selected community area (Devathanam Pettai)
- Mothers who are not willing to participate in the study

### **Development of Data Collection Instrument**

#### **Tools**

1. Demographic variables: Age, education, occupation, religion, income, type of family, previous exposure to infection, previous source of information.
2. Self-structured knowledge assessment scale
3. Self-structured attitude assessment scale

#### **Scoring procedure for assess knowledge**

<b>Score</b>	<b>Interpretaton</b>
Above -70	Adequate knowledge
70 – 30	Moderately adequate knowledge
Below - 30	Inadequate knowledge

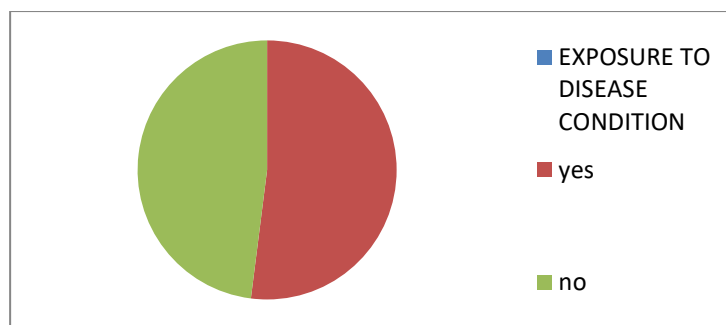
#### **Scoring interpretation for attitude**

<b>Score</b>	<b>Interpretation</b>
10 - 8	Positive
7-4	Neutral
Below - 4	Negative

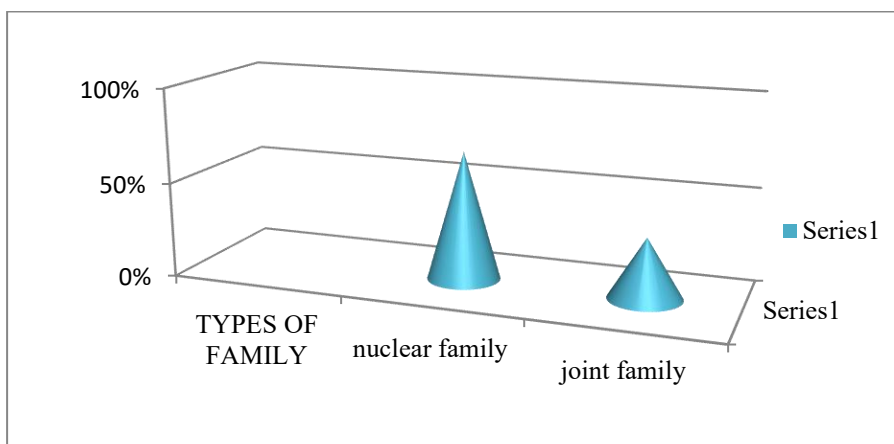
#### **Analysis of Data**

The percentage-wise distribution of the demographic variable age shows that among the 50 samples, the majority, 22 (44%), were in the age group of 26–30 years, followed by 19 (38%) in the age group of 20–25 years. Additionally, 8 (16%) participants were in the age group of 31–35 years, and only 1 (2%) was in the age group of 36–40 years.

The percentage-wise distribution of the demographic variable exposure to disease condition indicates that out of the 50 samples, 26 (52%) participants had been exposed to the disease condition, while 24 (48%) had not been exposed.

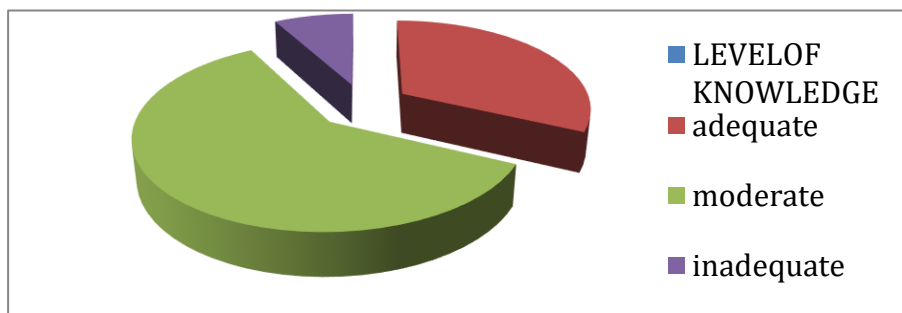


**Percentage wise distribution of demographic variable types of family**



It shows that among 50 samples were, based on types of family 34(68%) were in nuclear family, 16 (32%) were in joint family

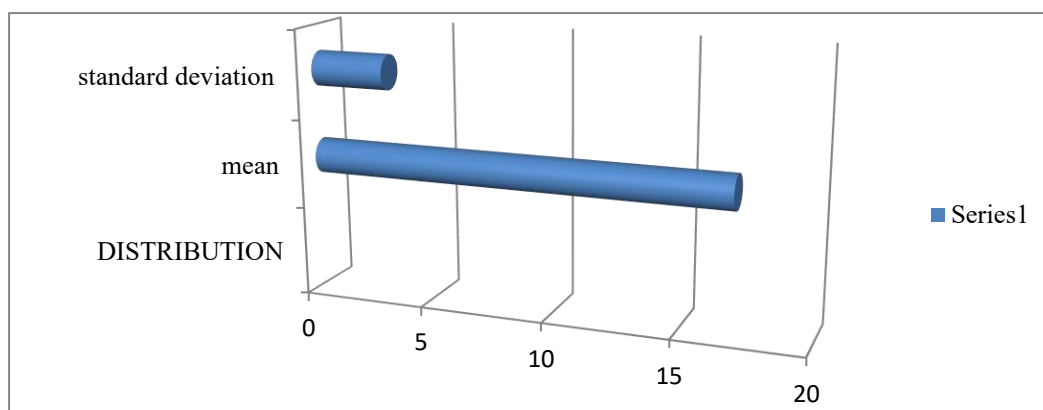
**Frequency and percentage wise distribution of demographic variables to assess the knowledge regarding chicken pox.**



It shows that the distribution of response of the level of knowledge among village setting regarding chicken pox 32% of mothers with adequate knowledge 60% of moderate adequate and 8% Of inadequate knowledge.

**Percentage wise distribution of mean and standard deviation of level of knowledge**

It shows that distribution of overall knowledge regarding chicken pox is about the mean (17) and standard deviation (3.04)



Association between the selected demographic variables to assess the level of knowledge

S. No	Demographic Variable	Category	Adequate (N, %)	Moderate (N, %)	Inadequate (N, %)	Chi-square	P-value	Significance
1	Age in years	20–25 years	7 (14%)	9 (18%)	3 (6%)	6.542	0.375	NS
		26–30 years	8 (16%)	14 (28%)	0 (0%)			
		31–35 years	1 (2%)	5 (10%)	1 (2%)			
		36–40 years	0 (0%)	2 (4%)	0 (0%)			
2	Education	Illiterate	0 (0%)	3 (6%)	1 (2%)	8.0080	0.175	NS
		High school	10 (20%)	12 (24%)	1 (2%)			
		Higher secondary	3 (6%)	7 (14%)	2 (4%)			
		Graduation	3 (6%)	8 (16%)	0 (0%)			
3	Occupation	Unemployment	2 (4%)	5 (10%)	0 (0%)	3.7477	0.625	NS
		Self employment	3 (6%)	4 (8%)	2 (4%)			
		Hard worker	1 (2%)	2 (4%)	0 (0%)			
		House wife	10 (20%)	19 (38%)	2 (4%)			
4	Family income	5000–10000	5 (10%)	20 (40%)	2 (4%)	16.5681	0.0175	Significant
		10000–15000	5 (10%)	8 (16%)	0 (0%)			
		15000–20000	6 (12%)	1 (2%)	1 (2%)			
		Above 30000	0 (0%)	1 (2%)	1 (2%)			
5	Religion	Hindu	13 (26%)	20 (40%)	4 (8%)	2.6810	0.375	NS
		Muslim	0 (0%)	0 (0%)	0 (0%)			
		Christian	3 (6%)	10 (20%)	0 (0%)			
		Others	0 (0%)	0 (0%)	0 (0%)			

### **Percentage wise distribution of level of attitude**

It shows that the distribution of response level of attitude among mothers of under five children regarding chicken pox 35(70%) has positive, 8 (16%) has neutral ,7 (14%) has negative.

### **Discussion**

#### **The first objectives were demographic variables among mothers of under five children**

The findings show the frequency and percentage distribution of demographic variables among 50 mothers of under-five children. Most mothers (44%) were aged 26–30 years, followed by 38% in the 20–25 years group. Regarding education, 40% had completed high school, and 64% were housewives. In terms of family income, 54% earned Rs. 5000–10000, and 74% belonged to Hindu religion. The majority (68%) were from nuclear families, and 52% had exposure to disease conditions. Most mothers (56%) obtained information from journals, and 50% had one child.

#### **The second objectives were to assess the knowledge and attitude regarding chicken pox among mothers of under five children in Devathanampettai at Villupuram district.**

The major findings of the study revealed that 32% of the participants had adequate knowledge, while the majority, 60%, had moderate knowledge, and 8% had inadequate knowledge. Regarding attitude towards chickenpox, about 70% of the participants had a positive attitude, 16% showed a neutral attitude, and 14% had a negative attitude.

#### **The third objectives of the study were to find out the association between the knowledge with demographic variable of mothers of under five children.**

This study shows that the association between the knowledge score with the demographic variables such as age, education, occupation, familyincome, religion, types of family, exposure to disease condition, previous source of information and the number of children of mothers of under five children regarding chicken pox.

### **Summary of the study**

The study was conducted to assess the knowledge and attitude regarding chickenpox among mothers of under-five children in Devathanam Pettai. The objectives of the study were to assess the knowledge regarding chickenpox among mothers of under-five children, to evaluate their attitude towards chickenpox, and to find out the association between knowledge scores and selected demographic variables. A descriptive research design was adopted for the study. The sample consisted of 50 mothers of under-five children, and a convenient sampling technique was used to select the participants.

### **Implications for nursing practices**

The finding of the study has several implications on nursing practices, nursing theories, nursing education and nursing research.

### **Nursing Practice**

The study emphasizes the importance of improving knowledge regarding chickenpox among mothers of under-five children. It highlights the need for conducting educational programs that include more knowledge- and attitude-based questions to enhance awareness and understanding of chickenpox among mothers.

### **Nursing Theories**

The present study supports the idea that mothers of under-five children can improve their knowledge regarding chickenpox when given appropriate opportunities. It also suggests that structured guidance and education can positively influence both knowledge and attitude towards the disease.

### **Conclusion**

Based on the study findings, it can be concluded that demographic variables show some level of association with the knowledge scores among mothers of under-five children.

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# **A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING IODINE DEFICIENCY AND ITS MANAGEMENT AMONG ADOLESCENTS IN A SELECTED SCHOOL AT PANRUTI, CUDDALORE DISTRICT**

**S. Kavya**

Mailam Nursing College, Mailam, Tamil Nadu 604304

## **Abstract**

**Background:** Iodine deficiency disorders are a major public health problem, especially among adolescents due to increased nutritional needs and lack of awareness.

**Aim:** To assess the effectiveness of a structured teaching programme on knowledge regarding iodine deficiency and its management among adolescents.

**Methods:** A pre-experimental one-group pre-test post-test design was used among 30 adolescents selected through purposive sampling. Data were collected using a structured questionnaire, and a teaching programme was administered.

**Results:** Post-test scores showed a significant improvement in knowledge compared to pre-test, with most students achieving adequate knowledge. Significant associations were found with sex, religion, and dietary pattern.

**Conclusion:** Structured teaching programmes are highly effective in improving knowledge and can help prevent iodine deficiency among adolescents.

**Keywords:** Iodine Deficiency, Adolescents, Knowledge, Teaching Programme, Nutrition.

## **Introduction**

Iodine Deficiency Disorders (IDD) refer to a group of conditions caused by inadequate iodine intake in a population, all of which are preventable by ensuring sufficient iodine consumption, as defined by the World Health Organization. Globally, an estimated 1.88 billion people are at risk of iodine deficiency. In India, more than 70 million people are affected by iodine deficiency disorders, with over 200 million people considered at risk. Additionally, about 29.8% of school-aged children worldwide are found to be iodine deficient, highlighting it as a major public health concern.

## **Background of the Study**

Iodine deficiency is a significant public health concern, particularly among adolescents, as it can adversely affect growth, cognitive development, and overall health. Adolescents are particularly vulnerable to iodine deficiency due to their increased nutritional needs during periods of rapid

growth and development. Poor knowledge regarding the importance of iodine in the diet, sources of iodine, and prevention of iodine deficiency disorders (IDDs) contributes to the persistence of this nutritional issue.

### Objectives

- To assess the pretest and posttest level of knowledge regarding Iodine Deficiency and its Management among adolescent.
- To compare the pretest and posttest level of knowledge regarding Iodine Deficiency and its Management among adolescent.
- To find the association between posttest level of knowledge regarding Iodine Deficiency and its Management among adolescent with the selected demographic variables.

### Operational Definition

**Assess:** In this study, it refers to measuring adolescents’ knowledge regarding iodine deficiency and its management using a structured knowledge questionnaire.

**Effectiveness:** It refers to the improvement in knowledge level after the administration of a structured teaching programme on iodine deficiency disorder among adolescents.

**Structured Teaching Programme:** A systematically planned educational intervention designed to provide knowledge on iodine deficiency and its management among adolescents.

**Knowledge:** It refers to the level of understanding of adolescents regarding iodine deficiency disorder.

**Iodine Deficiency Disorder:** It refers to a group of health conditions caused by inadequate intake of iodine.

**Adolescents:** In this study, it refers to individuals aged between 12 and 17 years.

### Hypothesis

H1- There will be a significant difference between the pretest and posttest level of knowledge regarding Iodine Deficiency and its Management.

### Delimitation:

1. The study was delimited to adolescent.
2. The study sample was delimited to selected school.
3. The study was delimited to a data collection period of two weeks.
4. The study was delimited to a sample size of 30 adolescent.

### Review of Literature

S. No	Literature	Total
1.	Literature related to knowledge regarding cause Iodine Deficiency Disorder	8
2.	Literature related to study the incidence of Iodine Deficiency Disorder	10
3.	Literature related to prevalence of Iodine Deficiency Disorder	12
	<b>Total</b>	30

## Research Methodology

- **Research approach:** Quantitative research approach was used for this study
- **Research design:** Pre experimental one group pretest and posttest design
- **Research variable:**
- **Independent variable:** Structured teaching programme on Iodine Deficiency and its management
- **Dependent variable:** Knowledge regarding Iodine Deficiency among adolescents
- **Setting of the study:** The study was conducted in Panruti, Cuddalore district.
- **Sample population:** The study population comprised of adolescent.
- **Sample:** The samples are adolescent school children
- **Sample size:** The sample size of the study consists of 30 adolescents in selected school.
- **Sample technique:** Purposive sampling technique used for this study.

## Sample Criteria

### Inclusion criteria

- The student is willing to participate in this study.
- The student between the age group 16 to 17
- The student is available at the time of data collection.

### Exclusion criteria

- The students are not willing to participate in the study.

## Development and description of the tools

The tools used for the study is divided under the following sections:

**Section A:** It refers to demographic variables as age, types of family, family income, education, occupation, religion.

**Section B:** This section contains assessment of the level of knowledge regarding Iodine Deficiency and its Management among Adolescent at selected school. A questionnaire which consists of 25 multiple choice questions and it is used to assess the knowledge regarding Iodine Deficiency and its Management among Adolescent.

## Data Collection Procedure

### Assessment Phase

- The main study was conducted from 16-12-2023 to 25-12-2023
- Formal permission was obtained from the principal mam of Panruti School. Each adolescent was explained about the purpose of the study and written consent was obtained.

Confidentiality was assured to all adolescent get the cooperation through at the process of data collection.

- Total 30 samples were selected by purposive sampling technique was used this study.

**Intervention Phase:** Pre-test was conducted for 10 minutes. The structured teaching programme and were given to the adolescent for 30 - 40 minutes.

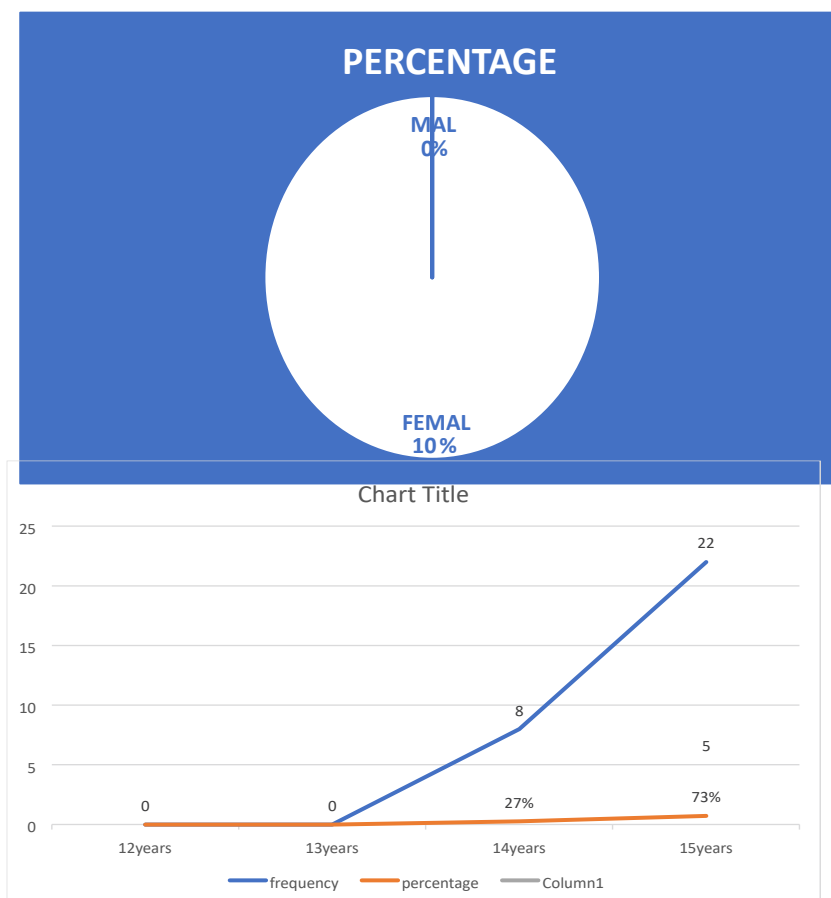
**Evaluation Phase:** The post test was conducted using the same questionnaire after the same group. The data was collected for the period of one week.

**Plan for data analysis:**

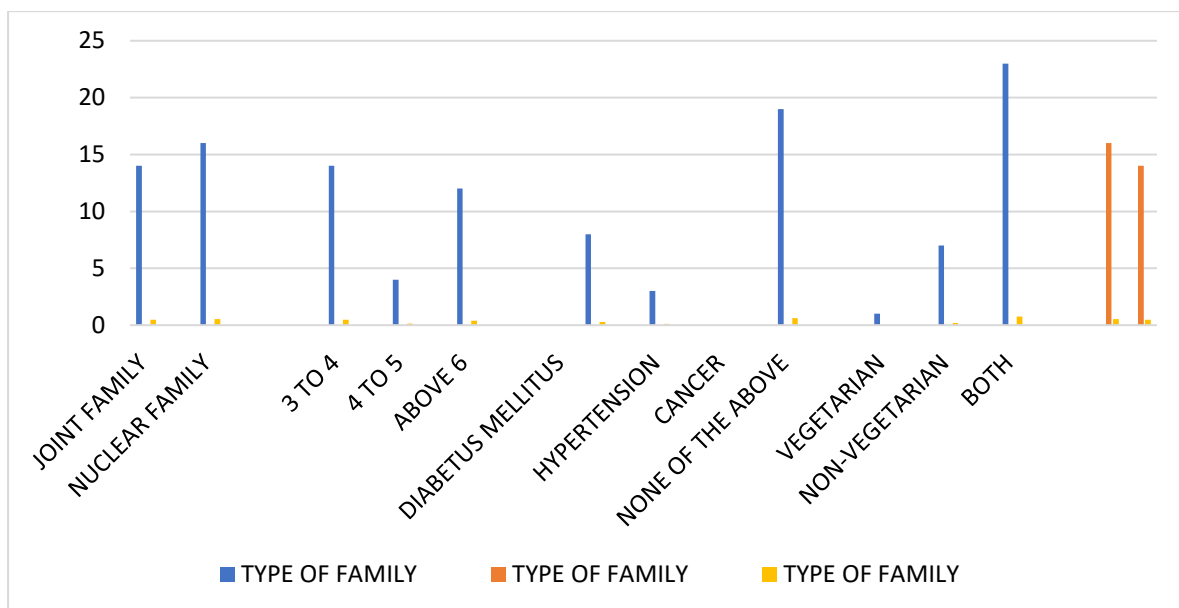
The data was analyzed by using descriptive and inferential statistics.

- Descriptive Statistics was used to analyze the demographic variables of the samples.
- Effectiveness of educational intervention on by Iodine Deficiency and its Management encountered by adolescent was determined by Paired ‘t’ test method.
- Association between the level of knowledge regarding Iodine Deficiency and its Management among Adolescent, with selected demographic variables was analyzed by ‘Chi’ square test.

**Frequency and percentage wise distribution of demographic variables of school students. (N=30)**



**Reveals the frequency and percentage wise distribution of demographic variables among school students. Out of 30 school students**



**Frequency and percentage wise distribution of demographic variables of school students.**

S. No	Demographic Variable	Frequency	Percentage
<b>8.Educational Status</b>			
	X STD	15	50%
	VII STD	0	0
	XII STD	0	0
	XI STD	15	50%
<b>9.Place of residence</b>			
	Urban	16	53%
	Rural	14	47%
<b>10.Dietary pattern</b>			
	Vegetarian	1	3%
	Non-Vegetarian	7	20%
	Both	23	77%

The findings reveal a comparison of pre-test and post-test levels of knowledge among the study population. In the pre-test, the majority of participants, 22 (73%), had inadequate knowledge, while 8 (27%) had moderately adequate knowledge. In the post-test, a marked improvement was observed, where 22 (73%) of the participants achieved adequate knowledge and 8 (27%) had moderately adequate knowledge. These results clearly indicate that the structured teaching

programme had a significant positive effect in improving the knowledge regarding iodine deficiency and its management among school students

**Pre-test and Post-test level of knowledge among school students regarding Iodine Deficiency and Management.**

Level of Knowledge Content	Pre -test		Post-test	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Adequate knowledge (71%-100%)	0	0	22	73%
Moderately adequate knowledge (35%-70%)	8	27%	8	27%
Inadequate knowledge (Below 35%)	22	73%	0	0

**Comparison of mean scores of pre-tests and post-test level of knowledge among school students.**

S. No	Knowledge Score	Maximum Score	Range	Mean	Sd	Mean Percentage
1.	Pre-test	100	100-25	10.06	1.93	33.53%
2.	Post-test	100	100-25	16.4	2.39	54.66%

The above table describe the comparison of mean pre-test and post-test knowledge level on Iodine Deficiency. The post-test mean score (16.4) was high when compared to the pretest (10.06). With regard to standard deviation the pre-test value is (1.93) and post-test value is (2.39) and the mean percentage is (33.53%) in pre-test and (54.66%) in post-test

**Association of post-test level of knowledge with their demographic variable.**

Demographic Variables	Level of Knowledge						Df	(ch) <sup>2</sup>	P(Value)
	Adequate knowledge	%	Moderate knowledge	%	Inadequate knowledge	%			
1.Age in years							1	1.21	0.271
a) 12 years	-	-	-	-	-	-	2		
b) 13 years	-	-	-	-	-	-			
c) 14 years	-	-	8	27%	-	-			
d) 15 years	3	10%	19	63%	-	-			

2.Gender							0	0	Constant
a) Male	-	-	-	-	-	-			
b) Female	3	10 %	27	90%	-	-			
3.Religion							0	0	Constant
a) Hindu	3	10 %	27	90%	-	-			
b) Muslim	-	-	-	-	-	-			
c) Christian	-	-	-	-	-	-			
d) Others	-	-	-	-	-	-			
4.Family income (Monthly)									
a) Rs.10,000-20,000	1	3%	4	13%	-	-	3	0.97	0.81
b) Rs.20,000-30,000	1	3%	7	23%	-	-		3	
c) Rs.30,000-40,000	-	-	1	3%	-	-			
d) Above 40,000	1	3%	15	50%	-	-			
5.Education Status							1	3.33	0.068
a) 10 <sup>th</sup> standard	3	10 %	12	40%	-	-		4	
b) 11 <sup>th</sup> standard	-	-	15	50	-	-			
c) 12 <sup>th</sup> standard	-	-	-	-	-	-			
d) 6 <sup>th</sup> standard	-	-	-	-	-	-			
6.Types Of Family							1	0.23	0.626
a) Nuclear Family	2	7%	14	47%	-	-		8	
b) Joint Family	1	3%	13	43%	-	-			
7.Total no of members in the family									
a)3 to 4 years	1	3%	13	43%	-	-			
b) 4 to 5 years	-	-	4	13%	-	-	2	1.16	0.558
c)Above 6 years	2	7%	10	33%	-	-		3	
8.Dietary pattern							2	9.71	0.008
a) Vegetarian	1	3%	-	-	-	-			
b) Non-Vegetarian	-	-	6	20%	-	-			
c) Both	2	7%	21	70%	-	-			
9.Any communicable disease									

a) Diabetes Mellitus	1	3%	7	23%	-	-	2	2.34 3	0.31
b) Hypertension	1	3%	2	7%	-	-			
c) Cancer	-	-	-	-	-	-			
d) None of the these	1	3%	18	60%	-	-			
10. Place of Residence							1	3.29 2	0.070
a) Rural	-	-	14	47%	-	-			
b) Urban	3	10 %	13	43%	-	-			

\*P < 0.05 significant S – Significant, N.S – Not Significant

Shows the association between knowledge scores and their demographic variables. It reveals that there was no significant association between knowledge scores of Iodine Deficiency and Its Management among school going children with the demographic variables such as age, education, types of family, family members, monthly family income, communicable disease, place of residence. Whereas there was significant association was found with knowledge scores of Iodine Deficiency and its Management among school going children with their demographic variables such as sex, religion, dietary pattern.

### Discussion

The study aimed to assess the existing level of knowledge regarding iodine deficiency among adolescents and found that overall knowledge was inadequate. A majority of participants (73%) had poor knowledge, while only 27% demonstrated moderately adequate understanding, indicating a clear awareness gap. The hypothesis stating that there would be a significant increase in knowledge levels was accepted based on the study findings. These results are consistent with the work of Adrienne Hatch-McChesney *et al.* (2022), who identified iodine deficiency as a major global nutritional problem affecting 35–45% of the population. It is also a leading cause of Goiter, impacting billions worldwide and emphasizing the importance of health education.

The study further examined the association between post-test knowledge and selected demographic variables among adolescents. Findings showed that most variables—such as age, family income, educational status, type of family, number of family members, history of communicable disease, and place of residence—were not significantly associated with knowledge levels. However, sex, religion, and dietary pattern demonstrated a significant association with knowledge. These findings are supported by Zhifei Wo *et al.* (2024), who highlighted that iodine deficiency remains a global public health concern and that demographic and lifestyle factors can influence awareness and nutritional status.

## **Nursing Implications**

### **Nursing Practice**

The study emphasizes the need to improve knowledge regarding iodine deficiency and its management among adolescents. Structured teaching programs can be conducted for school students to enhance their awareness. Increased knowledge will help in early identification and effective management of iodine deficiency among adolescents.

### **Nursing Administration**

The findings of the present study highlight the importance of incorporating educational tools in practice. Nursing administrators should encourage and provide opportunities for nursing students to update and disseminate knowledge regarding iodine deficiency. Special focus should be given to all aspects of iodine deficiency among adolescents in planning health education programs.

### **Nursing Education**

Nurse educators should place greater emphasis on preparing students to deliver health education to the public, particularly regarding iodine deficiency among adolescents. Nursing education should also focus on the practical application of knowledge in real-life settings to promote better health outcomes.

### **Nursing Research**

There is significant scope for further research in this area. Future studies can be conducted to evaluate the effectiveness of various teaching strategies in educating school students about iodine deficiency. The findings can contribute to evidence-based nursing practice and support the development of more effective health education interventions.

### **Recommendations for the study**

- Mass health education campaign can be arranged by using IEC package.
- The similar study can be conducted to large sample.
- The descriptive study can be done to assess the association of knowledge regarding iodine deficiency among adolescents with their demographic variables.

### **Conclusion**

In pre-test, 8(27%) of study population had moderately adequate knowledge and 22(73%) of study population had inadequate knowledge. In post-test, 22(73%) of study population had adequate knowledge, 8(27%) of study population had moderately adequate knowledge. The post-test mean score (16.4) with SD (2.39) was high when compared to the pre-test (10.06) with SD (1.93). Hence, the study shows that there is a significant difference between the post-test level of knowledge regarding iodine deficiency with their demographic variable

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# **A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING NUTRITIONAL DIET AMONG ANTENATAL MOTHERS AT SATHIYAKANDANUR VILLAGE IN VILLUPURAM DISTRICT**

**R. Thenmozhi**

Mailam Nursing College, Mailam, Tamil Nadu 604304

## **Abstract**

**Background:** Adequate nutrition during pregnancy is vital for maternal and fetal health, but lack of awareness can lead to complications.

**Aim:** To assess the effectiveness of a structured teaching programme on knowledge regarding nutritional diet among antenatal mothers.

**Methods:** A pre-experimental one-group pre-test post-test design was used among 30 antenatal mothers selected through convenience sampling. Data were collected using a structured questionnaire, and a teaching programme was administered.

**Results:** Post-test scores showed a significant improvement in knowledge compared to pre-test, with increased levels of adequate knowledge.

**Conclusion:** Structured teaching programmes are effective in improving nutritional knowledge and promoting healthy practices among antenatal mothers.

**Keywords:** Nutritional diet, antenatal mothers, knowledge, teaching programme, maternal health

## **Introduction**

During pregnancy, a woman must eat adequately to supply enough nutrients to the fetus, so it can grow, as well as to support her own nutrition. Good nutrition during the 38 to 40 weeks of a normal pregnancy is essential for both mother and child. The pregnant woman must provide nutrients and calories for the fetus, the amniotic fluid, the placenta, and the increased blood volume and breast, uterine, and fat tissue. The diet author recommend is made up of 20% carbohydrates, 65% fat and 15%protein. So, it is a low / moderate carbohydrates, high fat and moderate protein diet by calories, and 35% animal foods and 65% plant foods.

## **Need for the Study**

Globally, food and nutrition crises have increased by 35%, rising from 5.5 million in 2020 to 6.9 million in 2022, indicating a growing burden of nutritional problems. In India, around 80% of mothers are affected by nutritional deficiencies, highlighting a major public health concern. In Tamil Nadu, approximately 29.8% of the population is affected by iodine deficiency disorders. At

the local level, in Villupuram, about 1.8% of people are reported to be affected. These statistics emphasize the need for awareness and preventive interventions to address iodine deficiency and improve nutritional status.

### **Statement of the Problem**

A study to evaluate the effectiveness of structured teaching programme on knowledge regarding nutritional diet among antenatal mother at Sathiyakandanur village in villupuram district.

### **Objectives**

- To assess the knowledge regarding nutritional diet among antenatal mother at selected village.
- To determine the effectiveness of structured teaching programme on knowledge regarding nutritional diet among antenatal mother
- To find out the association between pre-test and posttest knowledge with selected demographic variable.

### **Operational Definition**

- **Assess:** In this study, it refers to measuring the level of knowledge among antenatal mothers using a structured and validated questionnaire.
- **Effectiveness:** It refers to the extent to which the structured teaching programme on nutritional diet improves the knowledge of antenatal mothers.
- **Structured Teaching Programme:** A planned educational intervention designed to provide information on nutritional diet to antenatal mothers, assessed through a structured questionnaire.
- **Knowledge:** It refers to the facts, information, and understanding acquired through education or experience regarding nutritional diet.
- **Nutrition:** It is the science of food and nutrients and their relationship to health and disease.
- **Diet:** It refers to a balanced intake of food that provides all essential nutrients without exceeding the recommended calorie intake.
- **Antenatal Mother:** It refers to a woman who is pregnant and in the antenatal period.

### **Hypothesis**

H1 -There will be assessing the knowledge regarding nutritional diet

### **Review of Literature**

- **Section A:** Literature related to knowledge regarding nutritional diet.(5 literature)
- **Section B:** Literature related to effect regarding nutritional diet.(5 literature)
- **Section C:** Literature related to prevention of nutritional deficiency (5 literature)

## Research Methodology

A quantitative research approach was used with a pre-experimental one-group pre-test post-test design. The study was conducted at Sathiyakandanur among pregnant women residing in Villupuram district. The sample consisted of 30 antenatal mothers selected using a convenient sampling technique. Data were collected using a self-structured knowledge questionnaire and analyzed using descriptive and inferential statistics.

The independent variable was the structured teaching programme on nutritional diet, while the dependent variable was the knowledge regarding nutritional diet among antenatal mothers.

## Sample Criteria

### Inclusion criteria

- Antenatal mother who are willing to participate in the study
- Antenatal mother who are with or without having the history of nutritional disorders
- Antenatal mother who are availability at the time of data collection

### Exclusion criteria

- Antenatal mother who are not to willing participant in the study Unavailable at the time of data collection.

## Scoring

Each correct response was awarded by 1 mark and no score was given for wrong answer.

The maximum score was 25 and the scoring keys were categorized as following.

S. No	Score	Interpretation
1	21 – 25	Adequate knowledge
2	11 – 20	Moderate knowledge
3	< 10	Inadequate knowledge

## Data Analysis and Interpretation

Data collected were organized under the following sections.

**Section A:** Frequency and percentage wise distribution of demographic variables of antenatal mother.

**SectionB:** Pre-test and post-test level of knowledge among antenatal mother regarding nutritional diet.

**Section C:** Comparison of mean scores of pretests and post-test level of knowledge among antenatal mother.

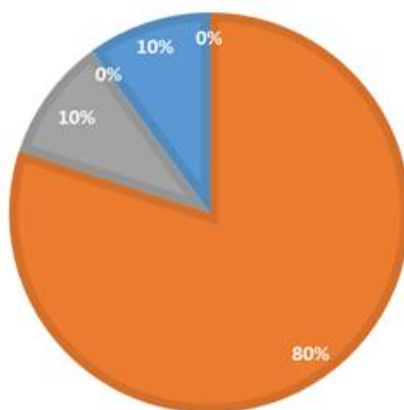
**Section D:** Association of pre-test level of knowledge with their selected demographic variables.

**Section A: Frequency and percentage wise distribution of demographic variables of antenatal mother.**

**Table 1: Frequency and percentage wise distribution of demographic variables of antenatal mother. (N=30)**

S. No	Demographic variables	Frequency (n)	Percentage (%)
1.	Age (in years)		
	a) 20-25	24	80 %
	b) 26-30	3	10 %
	c) above 30	0	0
	d) below 18	3	10 %
2.	Week of gestation		
	a) First trimester	15	80 %
	b) Second trimester	12	40 %
	c) Third trimester	3	10 %
3.	Education		
	a) Primary	18	60 %
	b) Secondary	9	30 %
	c) Degree	3	10%
	d) None	0	0
4.	Occupation		
	a) House wife	28	93.3 %
	b) Government job	0	0
	c) Private job	2	6.7 %
5.	Mother language		
	a) Tamil	30	100 %
	b) English	0	0
	c) Others	0	0

■ Age (in years) ■ 20-25 ■ 26-30 ■ Above 30 ■ Below 18



**Section B: Pre-test and Post-test level of knowledge among antenatal mother regarding nutritional diet**

Level of Knowledge	pre -test		post-test	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Adequate knowledge (21-25)	0	0	12	40
Moderately adequate knowledge (11- 20)	7	23	18	60
Inadequate knowledge (Below 10)	23	77	0	0

**Section C: Comparison of mean scores of pre-test and post-test level of knowledge among sathiyakandanur village people.**

S. No	Knowledge score	Maximum score	Mean	SD	Mean Percentage
1.	Pre-test	25	8.3	2.7	27.6%
2.	Post-test	25	18.9	4.2	63%

**Section D: Association of post-test level of knowledge among antenatal mother with their selected demographic variables. (N=30)**

S. No	Demographic Variable	Category	Adequate Knowledge (n, %)	Moderate Knowledge (n, %)	Inadequate Knowledge (n, %)	d	$\chi^2$ Value	p Value	Inference
1	Age	20–25	7 (23%)	17 (57%)	0 (0%)	2	1.235	0.63	NS
		26–30	0 (0%)	3 (10%)	0 (0%)				
		Above 30	0 (0%)	0 (0%)	0 (0%)				
		Below 18	1 (3%)	2 (7%)	0 (0%)				
2	Week of gestation	First trimester	4 (13%)	11 (37%)	0 (0%)	2	2.142	0.37	NS
		Second trimester	5 (17%)	7 (23%)	0 (0%)				
		Third trimester	0 (0%)	3 (10%)	0 (0%)				
3	Education	Primary	5 (17%)	13 (43%)	0 (0%)	4	0.105	0.93	NS

		Secondary	3 (10%)	6 (20%)	0 (0%)				
		Degree	1 (3%)	2 (7%)	0 (0%)				
		None	0 (0%)	0 (0%)	0 (0%)				
4	Occupation	Housewife	7 (23%)	21 (70%)	0 (0%)	1	0.596	0.37	NS
		Government job	0 (0%)	0 (0%)	0 (0%)				
		Private job	1 (3%)	1 (3%)	0 (0%)				
5	Mother language	Tamil	9 (30%)	21 (70%)	0 (0%)	—	Constant	—	Not analyzed
6	Religion	Hindu	9 (30%)	21 (70%)	0 (0%)	—	Constant	—	Not analyzed
7	Income of family	₹10,000	5 (17%)	8 (27%)	0 (0%)	1	0.782	0.37	NS
		₹20,000	4 (13%)	13 (43%)	0 (0%)				
8	Nationality	Indian	9 (30%)	21 (70%)	0 (0%)	—	Constant	—	Not analyzed
9	Type of family	Joint	5 (17%)	11 (37%)	0 (0%)	1	0.025	0.82	NS
		Nuclear	4 (13%)	10 (33%)	0 (0%)				
10	Source of information	Mass media	0 (0%)	0 (0%)	0 (0%)	1	0.285	0.63	NS
		Health professional	7 (23%)	18 (60%)	0 (0%)				

NS: Not significant

### Discussion

The first objective of the study was to assess the pre-test level of knowledge among antenatal mothers regarding nutritional diet. The findings revealed that the majority 23 (77%) had

inadequate knowledge, while 7 (23%) had moderately adequate knowledge, indicating poor baseline awareness.

The second objective was to evaluate the effectiveness of the structured teaching programme. The comparison of pre-test and post-test results showed a marked improvement in knowledge, with the mean score increasing from 8.3 in the pre-test to 18.9 in the post-test, demonstrating the effectiveness of the intervention in improving knowledge.

The third objective was to find out the association between knowledge levels and selected demographic variables. The post-test findings showed that 12 (40%) had adequate knowledge and 18 (60%) had moderate knowledge; however, no significant association was found with demographic variables.

These findings are supported by previous studies, which also indicate that structured teaching programmes are effective in improving knowledge among antenatal mothers regarding nutritional practices.

### **Conclusion**

The study concludes that the structured teaching programme was highly effective in improving the knowledge of antenatal mothers regarding nutritional diet. There was a clear improvement in post-test knowledge scores compared to the pre-test, indicating the success of the intervention. The findings show that most mothers gained better understanding about the importance of proper nutrition during pregnancy. This improvement highlights the role of planned educational programmes in enhancing maternal health awareness. Nutritional education helps mothers make informed dietary choices during pregnancy. It also contributes to the prevention of nutritional deficiencies and related complications. Based on the findings, nutritional diet education should be incorporated into routine antenatal care services. It can be standardized as a protocol for all pregnant women attending health facilities. Regular health education sessions can further strengthen maternal knowledge and practices. Overall, the study emphasizes the importance of continuous nutritional counselling to promote safe and healthy pregnancy outcomes.

### **Nursing Implications**

The present study can help the nurses to enrich their knowledge regarding nutritional diet.

### **Nursing Service**

The nurses working in the hospital and the community setting can understand the need for knowledge regarding nutritional diet among antenatal mothers.

### **Nursing Education**

Efforts should be made to improve and expand nursing curriculum regarding nutritional diet. Conference, Workshop, Seminars can be organized for nurses to impact education towards the importance of nutritional diet.

### **Recommendation**

- A comparative study can be done between multi-gravida and primi gravida women.
- A study can be done to prevention of the nutritional disorder.
- A similar study can be replicated with large sample.
- A similar study can be conducted on knowledge, attitude, and diet of antenatal mother in relieving the nutritional disorder.

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# A STUDY TO ASSESS THE EFFECTIVENESS OF SELECTED NURSING INTERVENTIONS ON PULMONARY FUNCTION AMONG CLIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AT SMVMCH, PUDUCHERRY

**R. Gayathri**

Department of Medical Surgical Nursing, SMVNC, Puducherry

## **Abstract**

**Background:** COPD is a chronic respiratory disease that reduces pulmonary function and quality of life. Nursing interventions can help improve symptoms and patient outcomes.

**Aim:** To evaluate the effectiveness of selected nursing interventions on pulmonary function among clients with COPD.

**Methods:** A quantitative approach was used among COPD patients selected through purposive sampling. Pulmonary function was assessed using the Modified Borg Dyspnea Scale before and after 7 days of nursing interventions.

**Results:** Post-test findings showed a significant improvement in pulmonary function, with a reduction in very severe cases and an increase in moderate levels. Significant associations were found with clinical variables.

**Conclusion:** Selected nursing interventions are effective in improving pulmonary function and should be integrated into COPD management.

**Keywords:** COPD, Pulmonary Function, Nursing Interventions, Dyspnea, Respiratory Care.

## **Introduction**

Chronic Obstructive Pulmonary Disease (COPD) is a progressive, irreversible lung disease and a leading cause of death worldwide, accounting for over 3 million deaths annually. It is characterized by chronic airflow limitation due to conditions such as chronic bronchitis and emphysema. According to WHO (2024), COPD is the fourth leading cause of death globally, with a major burden in low- and middle-income countries. Tobacco smoking is the primary risk factor, followed by air pollution and occupational exposures. The GOLD 2023 guidelines define COPD as a chronic respiratory condition with persistent and progressive airflow obstruction caused by airway and alveolar abnormalities. Although there is no cure, early diagnosis and proper management can slow disease progression and improve quality of life.

## **Need for the Study**

In 2020, the global prevalence of Chronic Obstructive Pulmonary Disease (COPD) was estimated at 10.6%, affecting about 480 million people, and is projected to rise to 592 million cases by 2050,

with a higher increase expected among females and in low- and middle-income countries. While female prevalence is expected to increase, male prevalence may decline in percentage terms, though the absolute number of cases will still rise. Studies report COPD prevalence ranging from 6.5% to 7.7%, influenced by factors such as smoking, age, sex, environmental exposure, and indoor air pollution, though variations exist due to study heterogeneity. In India, the exact prevalence remains uncertain, highlighting the need for more comprehensive data. Individual studies have reported higher prevalence rates, such as 22.1%, with increased risk associated with smoking, low BMI, poor ventilation, and biomass fuel exposure. Additionally, complications such as chronic pulmonary aspergillosis have been identified in COPD patients, particularly among those with a history of tuberculosis, indicating the complexity and burden of the disease.

### **Statement of the Problem**

A study to assess the effectiveness of selected nursing interventions on pulmonary function among clients with chronic obstructive pulmonary disease at SMVMCH, Puducherry.

### **Objectives**

- To assess the level of pulmonary function among clients with chronic obstructive pulmonary disease.
- To assess the effectiveness of selected nursing interventions on pulmonary function among clients with chronic obstructive pulmonary disease.
- To associate the effectiveness of selected nursing interventions on pulmonary function among clients with their selected demographic variables and clinical variables.

### **Research Methodology**

A quantitative research approach was adopted in the present study to assess measurable outcomes related to pulmonary function among clients with Chronic Obstructive Pulmonary Disease (COPD). A pre-experimental one-group pre-test and post-test design was used to evaluate the effectiveness of the intervention by comparing outcomes before and after the intervention within the same group. The study was conducted at Sri Manakula Vinayagar Medical College and Hospital (SMVMCH), Puducherry, a tertiary care hospital with advanced clinical and research facilities. The target population included all clients with COPD, particularly those with chronic bronchitis, while the accessible population consisted of COPD clients admitted to SMVMCH during the data collection period. The study sample comprised 50 COPD clients who met the inclusion and exclusion criteria. A purposive sampling technique was used to select participants based on study requirements. The sample size was determined using the single population proportion formula to ensure adequacy and reliability of results in the absence of a control group.

### **Criteria for Sample Selection**

The criteria for selecting samples are categorized into inclusive and exclusive criteria.

### **Inclusion Criteria**

- The clients who are diagnosed with chronic obstructive pulmonary disease.
- The clients who was admitted at SMVMCH, Puducherry
- The clients who are able to speak and understand Tamil and English.
- Both male and female clients (Age group from 40 years)
- Clients staying in hospital for minimum 7 days

### **Exclusion Criteria**

- The clients who are not willing to participate for the study
- The clients who are with severe illness.
- The clients who are diagnosed with carcinoma

### **Development of Data Collection Instruments**

The tool was developed and standardized from extensive literature review, internet research, and expert discussion. The tool consists of the three sections.

Section A: Demographic variables and clinical variables

Section B: Modified Borg Dyspnea scale

Section C: Nursing intervention checklist for COPD clients

### **Description of Data Collection Instruments:**

#### **Section A: Demographic variables and clinical variables**

**Part 1- This section consists of 11 demographic variables such as Age in years, Gender, Religion, Area of living, educational status, Occupation status, Nature of work, Monthly income, Type of family, Dietary habits, unhealthy practices.**

Part-2-This section consistsof clinical variables such as duration of chronic obstructive pulmonary disease, stage of chronic obstructive pulmonary disease, family history of chronic obstructive pulmonary disease, comorbidities, use of inhalers or nebulizers.

#### **Section B: Modified Borg Dyspnea scale**

#### **Scoring interpretation:**

<b>Level of Dyspnea</b>	<b>Score</b>
<b>Mild</b>	0.5 – 1
<b>Moderate</b>	2-4
<b>Severe</b>	5-7
<b>Very Severe</b>	8-10

### **Data Collection Procedure**

After obtaining formal permission, the researcher began data collection. Informed consent was taken from clients with Chronic Obstructive Pulmonary Disease (COPD) at SMVMCH, Puducherry, who agreed to participate in the study. Using purposive sampling, 50 clients with COPD was selected.

In the pretest phase, demographic data and clinical data was collected using a unstructured demographic and clinical questionnaire. Pulmonary function was assessed using the Modified Borg Dyspnea Scale.

Following the pretest, a selected nursing interventions was implemented to the chronic obstructive pulmonary disease participants. The interventions included Monitor Respiratory status, administer oxygen therapy, encourage hydration, Positioning, Teach Breathing exercise, Use Incentive Spirometry, Inhaled Medications, Provide Nutritional support. The Study was conducted over a specified period.

In the post-test phase, the Modified Borg Dyspnea Scale was used again to reassess pulmonary function. The researcher ensured that all data remained confidential and used exclusively for research purposes.

### **Plan for Data Analysis**

The collected data was entered into Microsoft Excel (2020) and coded on a coding sheet. Analysis was conducted using SPSS (Statistical Package for Social Sciences) software version 26.0.

- Demographic variables and clinical variables were expressed as frequency and percentage distributions.
- The level of significance was using the t-test, and associations were tested with the chi-square test.
- Results were considered statistically significant if the p-value was less than 0.05.

### **Results**

#### **Description of the demographic variable of the clients with chronic obstructive pulmonary disease.**

Table 1 depicts the frequency and percentage distribution of the socio-demographic variables of clients with chronic obstructive pulmonary disease (N=50). The majority of clients (58%) were above 70 years of age, followed by 16% in the 51–60 years age group, 14% in the 40–50 years group, and 12% in the 61–70 years group. Most of the participants were male (80%), while females constituted 20%, and no transgender participants were reported. Regarding religion, the majority were Hindu (90%), with 10% being Muslim.

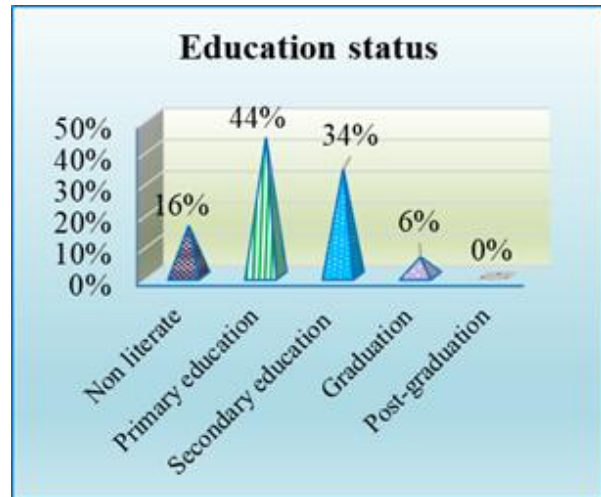
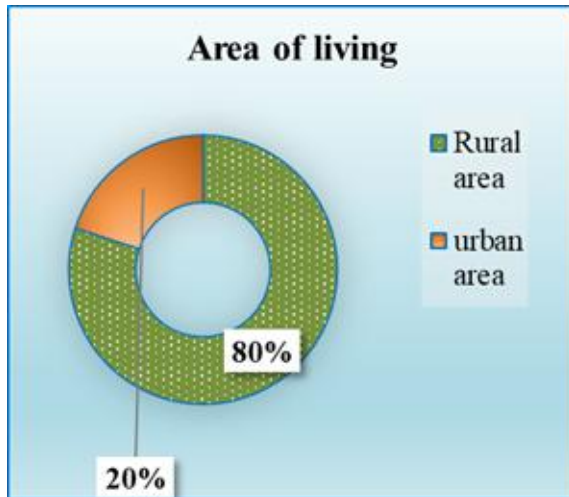
**Table 1: Frequency and percentage wise distribution of the demographic variable of the clients with chronic obstructive pulmonary disease with age in years, gender and religion.**

S. No	Socio demographic variables		Frequency	Percentage %
1	Age in years	40-50 years	7	14
		51-60 years	8	16
		61-70 years	6	12
		Above 70 years	29	58
2	Gender	Female	10	20
		Male	40	80
		Transgender	0	0
3	Religion	Hindu	45	90
		Muslim	5	10
		Christian	0	0
		others	0	0

**Table 2: Frequency and percentage wise distribution of the demographic variable of the clients with chronic obstructive pulmonary disease according to Monthly income per month, Type of family, Dietary habits and History of unhealthy (N= 50)**

S. No	Socio demographic variables		Frequency	Percentage %
1.	Monthly income per month	Less than 10,000/-	7	14
		10001-30,000/-	20	40
		30,000-50,000/-	16	32
		Above 50,000/-	7	14
2.	Type of family	Nuclear	7	14
		Joint	37	74
		Extended family	6	12
3.	Dietary habits	Vegetarian	10	20
		Non- vegetarian	40	80
4.	History of unhealthy practices	Alcohol consumption	4	8
		Smoking	31	62
		Both a and b	6	12
		None	9	18

Table 2 represents the Monthly income was distributed as follows: 40% earned between ₹10,001–30,000, 32% between ₹30,000–50,000, and 14% each earned below ₹10,000 or above ₹50,000. Most clients belonged to joint families (74%), with 14% from nuclear families and 12% from extended families. Dietary habits showed that 80% were non-vegetarians. Notably, 62% of the clients reported smoking, 12% both smoking and alcohol consumption, 8% alcohol alone, and 18% reported none of these unhealthy practices.



**Table 3: Frequency and percentage wise distribution of the demographic variable of the clients with chronic obstructive pulmonary disease according to Duration of COPD, Current COPD stage (as per GOLD classification) and group of symptoms in the past year (N= 50)**

S. No	Clinical variables		(n=50)	
			F	%
1.	<b>Duration of COPD.</b>	Less than 1 year	4	8
		1-5 years	28	56
		6–10 years	8	16
		More than 10 years	10	20
2.	<b>Current COPD stage (as per GOLD classification)</b>	Stage I (Mild)	1	2
		Stage II (Moderate)	5	10
		Stage III (Severe)	28	56
		Stage IV (Very Severe)	16	32
3.	<b>Group of symptoms in the past year</b>	Yes	41	82
		No	9	18

Table 3 presents the frequency and percentage distribution of clinical variables among clients with chronic obstructive pulmonary disease (N=50). More than half of the clients (56%) had been diagnosed with COPD for 1–5 years, while 20% had it for more than 10 years, 16% for 6–10 years, and only 8% for less than a year. As per the GOLD classification of COPD severity, the majority

(56%) were in Stage III (severe), followed by 32% in Stage IV (very severe), 10% in Stage II (moderate), and just 2% in Stage I (mild). A large proportion (82%) reported having experienced a group of symptoms related to COPD in the past year.

**Table 4: Frequency and percentage wise distribution of the demographic variable of the clients with chronic obstructive pulmonary disease according to Family History of Chronic Illness, Comorbidities of Chronic Illness and use inhalers or nebulizers (N=50)**

Sr. No	Clinical Variables	Details	N-50	
			F	%
1.	<b>Family History of Chronic Illness</b>	Chronic obstructive pulmonary disease	5	10
		Diabetes Mellitus	30	60
		Auto-immune disorder	5	10
		Others	10	20
2.	<b>Comorbidities of Chronic Illness</b>	Diabetes Mellitus	8	16
		Cardiovascular Disease	26	52
		Other Lung disorders	7	14
		Others	9	18
3.	<b>Use inhalers or nebulizers</b>	Yes	46	92
		No	4	8

Table 4 presents family history of chronic illnesses, 60% reported diabetes mellitus, 20% others, 10% COPD, and 10% autoimmune disorders. Among comorbid conditions, 52% of clients had cardiovascular disease, followed by 18% with other illnesses, 16% with diabetes mellitus, and 14% with other lung disorders. Notably, the vast majority (92%) reported regular use of inhalers or nebulizers, while only 8% did not use them regularly.

**Table 5: Percentage wise distribution of the level of pulmonary function among clients with chronic obstructive pulmonary disease (N=50)**

S. No	Level of Pulmonary Function	Pre-test		Post test	
		F	%	F	%
1.	<b>Mild</b>	4	8	4	8
2.	<b>Moderate</b>	5	10	17	34
3.	<b>Severe</b>	16	32	24	48
4.	<b>Very severe</b>	25	50	5	10

Table 5 presents the assessment of pulmonary function levels among clients with COPD during pre-test and post-test. In the pre-test, most clients (50%) had very severe pulmonary function,

followed by 32% with severe, 10% with moderate, and 8% with mild pulmonary function. In the post-test, there was an improvement in the distribution of pulmonary function levels, with only 10% remaining in the very severe category. The proportion of clients with severe pulmonary function was 48%, moderate pulmonary function increased to 34%, and mild pulmonary function remained at 8%. Overall, the findings indicate a positive shift in pulmonary function levels following the intervention.

**Table 6: Comparison of mean and SD score of level of pulmonary function among clients with chronic obstructive pulmonary disease (N=50)**

Level of Pulmonary Function	Mean	Mean Difference	Standard deviation	‘t’ value
Pretest	7.68	2.610	2.133	t = 20.782
Post test	5.07		2.157	p = 0.000 (S)

Table 6 shows the comparison of mean and standard deviation scores of pulmonary functions among COPD clients before and after the intervention. The pre-test mean score was  $7.68 \pm 2.133$ , while the post-test mean score decreased to  $5.07 \pm 2.157$ . The mean difference of 2.61 indicates a significant improvement in pulmonary function after the intervention. The calculated t value was 20.782, which was statistically significant at  $p = 0.000$ , confirming that the intervention had a significant effect on improving pulmonary function among clients with COPD.

**Table 7: Association between the effectiveness of selected nursing interventions on pulmonary function among clients with their selected demographic variables with age in years, gender and religion, area of living and education status**

S. No	Demographic variables	Level of Pulmonary function								Chi square X <sup>2</sup> value
		Mild		Moderate		Severe		Very Severe		
		N	%	N	%	N	%	N	%	
<b>1</b>	<b>Age in years</b>									X <sup>2</sup> =15.970 Df= 9 <b>p =0.068 (NS)</b>
	a) 40-50 years	1	2.0	4	8.0	2	4.0	0	0.0	
	b) 51-60 years	1	2.0	5	10.0	2	4.0	0	0.0	
	c) 61-70 years	0	0.0	4	8.0	2	4.0	0	0.0	
	d) Above 70 years	2	4.0	4	8.0	18	36.0	5	10.0	

<b>2.</b>	<b>Gender</b>									$X^2 = 1.143$ Df= 3 p =0.767 (NS)
	a) Female	0	0.0	4	8.0	5	10.0	1	2.0	
	b) Male	4	8.0	13	26.0	19	38.0	4	8.0	
	c) Transgender		0.0		0.0		0.0		0.0	
<b>3</b>	<b>Religion</b>									$X^2 = 1.950$ Df= 3 p =0.583 (NS)
	a) Hindu	3	6.0	16	32.0	22	44.0	4	8.0	
	b) Christian	1	2.0	1	2.0	2	4.0	1	2.0	
	c) Muslim	0	0.0	17	34.0	0	0.0	0	0.0	
	d) Others	0	0.0	0	0.0	0	0.0	0	0.0	
<b>4.</b>	<b>Area of living</b>									$X^2 = 1.143$ Df= 8 p =0.767 (NS)
	a) Rural area	4	8.0	13	26.0	19	38.0	4	8.0	
	b) urban area	0	0.0	4	8.0	5	10.0	1	2.0	
<b>5</b>	<b>Education status</b>									$X^2 = 11.995$ Df= 9 p =0.214 (NS)
	a) Non literate	0	0.0	3	6.0	3	6.0	2	4.0	
	b) Primary education	4	8.0	5	10.0	10	20.0	3	6.0	
	c) Secondary education	0	0.0	7	14.0	10	20.0	0	0.0	
	d) Graduation	0	0.0	2	4.0	1	2.0	0	0.0	
	e) Post-graduation	0	0.0	0	0.0	0	0.0	0	0.0	

The analysis indicates that there was no statistically significant association between the level of pulmonary function and most of the demographic variables, including age, gender, religion, area of living and education status.

**Table 8: Association between the effectiveness of selected nursing interventions on pulmonary function among clients with their selected demographic variables according to occupation status, Nature of work, Monthly income per month, Type of family, Dietary habits and history of unhealthy practices.**

S. No	Demographic Variable	Categories	Mild n (%)	Mode rate n (%)	Severe n (%)	Very Severe n (%)	$\chi^2$ Value	df	p Value	Inference
1	Occupation status	Employed	3 (6%)	11 (22%)	19 (38%)	3 (6%)	1.435	3	0.697	NS
		Unemployed	1 (2%)	6 (12%)	5 (10%)	2 (4%)				
2	Nature of work	Sedentary	1 (2%)	5 (10%)	2 (4%)	0 (0%)	12.343	6	0.055	NS
		Moderate	2 (4%)	6 (12%)	4 (8%)	0 (0%)				
		Heavy	1 (2%)	6 (12%)	18 (36%)	5 (10%)				
3	Monthly income	<10,000	1 (2%)	4 (8%)	1 (2%)	1 (2%)	15.346	9	0.082	NS
		10,001–30,000	2 (4%)	9 (18%)	7 (14%)	2 (4%)				
		30,000–50,000	1 (2%)	2 (4%)	13 (26%)	0 (0%)				
		>50,000	0 (0%)	2 (4%)	3 (6%)	2 (4%)				
4	Type of family	Nuclear	1 (2%)	4 (8%)	2 (4%)	0 (0%)	4.466	6	0.614	NS
		Joint	3 (6%)	12 (24%)	18 (36%)	4 (8%)				
		Extended	0 (0%)	1 (2%)	4 (8%)	1 (2%)				
5	Dietary habits	Vegetarian	0 (0%)	4 (8%)	5 (10%)	1 (2%)	1.143	3	0.767	NS

		Non-vegetarian	4 (8%)	13 (26%)	19 (38%)	4 (8%)				
6	History of unhealthy practices	Alcohol	0 (0%)	1 (2%)	1 (2%)	2 (4%)	11.518	9	0.242	NS
		Smoking	4 (8%)	10 (20%)	16 (32%)	1 (2%)				
		Both	0 (0%)	2 (4%)	3 (6%)	1 (2%)				
		None	0 (0%)	4 (8%)	4 (8%)	1 (2%)				

NS: Not Significant; \*p<0.05 Significant

Table 8 shows the association between the effectiveness of selected nursing interventions on pulmonary function (measured by level of pulmonary function) of clients with chronic obstructive pulmonary disease. The analysis indicates that there was no statistically significant association between the level of pulmonary function and most of the demographic variables, including occupation, nature of work, monthly income, type of family, dietary habits, and history of unhealthy practices with effectiveness of selected nursing interventions on pulmonary function of clients with chronic obstructive pulmonary disease.

Table 9 illustrates the association between the effectiveness of selected nursing interventions on pulmonary function (measured by level of pulmonary function) and the clinical variables of clients with chronic obstructive pulmonary disease. The findings indicate that there was a statistically significant association between the level of improvement in pulmonary function and the following clinical variables: duration of diagnosis of COPD, current COPD stage (as per GOLD classification), as their p-values were less than 0.05. On the other hand, clinical variables such as history of symptoms in the past year did not show a significant association with the effectiveness of the interventions, indicating that these factors did not influence the observed improvement in pulmonary function.

**Table 9: Association between the effectiveness of selected nursing interventions on pulmonary function among clients with their selected clinical variables according to duration of COPD, current COPD stage (as per GOLD classification) and history of group of symptoms in the past year (N=50)**

S. No	Clinical variables	Experimental group.								Chi square
		Mild		Moderate		Severe		Very Severe		
1	Duration of COPD	N	%	N	%	N	%	N	%	X <sup>2</sup> value
	a) Less than 1 year	4	8.0	0	0.0	0	0.0	0	0.0	X <sup>2</sup> =58.790 Df= 9 p =0.000 (S)
	b) 1-5 years	0	0.0	14	28.0	12	24.0	2	4.0	
	c) 6–10 years	0	0.0	3	6.0	4	8.0	1	2.0	
	d) More than 10 years	0	0.0	0	0.0	8	16.0	2	4.0	
2.	Current COPD stage (as per GOLD classification)									X <sup>2</sup> = 49.049 Df= 9 p =0.000 (S)
	a) Stage I (Mild)	1	2.0	0	0.0	0	0.0	0	0.0	
	b) Stage II (Moderate)	3	6.0	2	4.0	0	0.0	0	0.0	
	c) Stage III (Severe)	0	0.0	15	30.0	11	22.0	2	4.0	
	d) Stage IV (Very Severe)	0	0.0	0	0.0	13	26.0	3	6.0	
3	History of group of symptoms in the past year									X <sup>2</sup> =6.892 Df= 3 p =0.075 (NS)
	a) Yes	2	4.0	12	24.0	22	44.0	5	10.0	
	b) No	2	4.0	5	10.0	2	4.0	0	0.0	

**Table 10: Association between the effectiveness of selected nursing interventions on pulmonary function among clients with their selected clinical variables according to family history of chronic illness, Comorbidities of Chronic Illness, use inhalers or nebulizers (N=50)**

S. No	Clinical variables	Experimental group.								Chi square
		Mild		Moderate		Severe		Very Severe		
<b>1.</b>	<b>Family History Of Chronic Illness:</b>									$X^2 = 11.226$ Df= 9 p =0.261 (NS)
	a) Chronic obstructive pulmonary disease	0	0.0	0	0.0	4	8.0	1	2.0	
	b) Diabetes Mellitus	2	4.0	13	26.0	13	26.0	2	4.0	
	c) Auto-immune disorder	1	2.0	3	6.0	1	2.0	0	0.0	
	d) Others	1	2.0	1	2.0	6	12.0	2	4.0	
<b>2.</b>	<b>Comorbidities Of Chronic Illness</b>									$X^2 = 7.113$ Df= 9 p =0.625 (S)
	a) Diabetes Mellitus	2	4.0	2	4.0	3	6.0	1	2.0	
	b) Cardiovascular Disease	2	4.0	9	18.0	13	26.0	2	4.0	
	c) Other Lung disorders	0	0.0	3	6.0	4	8.0	0	0.0	
	d) Others	0	0.0	3	6.0	4	8.0	2	4.0	
<b>3.</b>	<b>use inhalers or nebulizers</b>									$X^2 = 12.436$ Df= 3 p =0.006 (S)
	a) Yes	2	4.0	15	30.0	24	48.0	5	10.0	
	b) No	2	4.0	2	4.0	0	0.0	0	0.0	

Table 10 illustrates the association between the effectiveness of selected nursing interventions on pulmonary function (measured by level of pulmonary function) and the clinical variables of clients with chronic obstructive pulmonary disease. The findings indicate that there was a statistically significant association between the Comorbidities of chronic illness and use inhalers or nebulizers as their p-values were less than 0.05. On the other hand, clinical variables such as family history of chronic illness did not show a significant association with the effectiveness of the interventions, indicating that these factors did not influence the observed improvement in pulmonary function.

### **Discussion**

The present study reveals that in the pre-test, the majority of clients (56%) had very severe pulmonary function, followed by 34% with severe pulmonary function, 10% with moderate pulmonary function, and only 8% with mild pulmonary function. In the post-test, there was a noticeable improvement in the levels of pulmonary function, with only 10% remaining in the very severe category. The proportion of clients with severe pulmonary function increased to 48%, while those with moderate pulmonary function rose to 34%, and the mild category remained unchanged at 8%. These findings indicate an overall improvement in the level of pulmonary function after the intervention.

The study finding showed that before intervention, the mean pulmonary function score was 7.68 with a standard deviation of 2.133, indicating higher levels of pulmonary function among the clients. After intervention, the mean pulmonary function score decreased to 5.07 with a standard deviation of 2.157, reflecting an improvement in their condition. The mean difference between the pre-test and post-test scores was 2.61, and the calculated t value was 20.782, which was statistically significant at  $p = 0.000$ . These results indicate that the nursing intervention led to a significant reduction in pulmonary function levels among the clients.

**H 1: There is significant difference between pretest and postest level on pulmonary function among clients with chronic obstructive pulmonary disease, Hence H1 is accepted.**

The finding reveals that there was no statistically significant association between the level of pulmonary function and most of the demographic variables, including age, gender, religion, area of living, education status, occupation, nature of work, monthly income, type of family, dietary habits, and history of unhealthy practices with effectiveness of selected nursing interventions on pulmonary function of clients with chronic obstructive pulmonary disease.

The findings indicate that there was a statistically significant association between the level of improvement in pulmonary function and the following clinical variables: duration of diagnosis of COPD, current COPD stage, and use of inhalers or nebulizers, as their p-values were less than 0.05. On the other hand, clinical variables such as history of symptoms in the past year, family

history of chronic illness, and comorbidities did not show a significant association with the effectiveness of the interventions, indicating that these factors did not influence the observed improvement in pulmonary function.

**H 2: There is no significant association between the effectiveness of selected nursing interventions on pulmonary function among clients with their selected demographic variables but there is a significant association with the clinical variables.**

### **Conclusion**

The present study concludes that the nursing interventions was effective in improving pulmonary function among clients with chronic obstructive pulmonary disease. There was a noticeable shift in the severity levels of pulmonary function, with fewer clients in the very severe category and more in the moderate and severe categories after the intervention. These findings highlight the positive impact of nursing interventions in managing and alleviating pulmonary function among COPD clients.

### **Nursing Implications**

#### **Nursing Practice**

The study highlights the importance of nursing interventions in improving pulmonary function among COPD clients. Nurses should provide respiratory care, monitor pulmonary status, educate clients on breathing exercises, inhaler use, and lifestyle modification, and ensure early detection of complications.

#### **Nursing Education**

Nursing students should be trained in assessment and management of COPD, with emphasis on clinical practice, demonstrations, and research activities to strengthen evidence-based care.

#### **Nursing Administration**

Administrators should ensure staff training, availability of respiratory care equipment, and implementation of standardized protocols for effective COPD management.

#### **Nursing Research**

The study supports further research on nursing interventions to improve respiratory outcomes and enhance evidence-based COPD care.

### **Recommendations**

- Conduct studies with larger samples in varied settings.
- Compare different nursing interventions for COPD management.
- Promote patient education on self-care and breathing techniques.

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# A STUDY TO ASSESS THE KNOWLEDGE AND IMPACT OF LONG-TERM HEADPHONE USE ON HEARING ABILITY AMONG ADOLESCENTS IN A SELECTED ARTS AND SCIENCE COLLEGE IN PUDUCHERRY

S. Rajeswari

Department of Medical Surgical Nursing, SMVNC, Puducherry

## Abstract

**Background:** Iodine deficiency is a common nutritional disorder and a major public health concern among adolescents, often leading to conditions such as Goiter. Limited awareness about iodine deficiency and its management can adversely affect health outcomes, highlighting the need for effective educational interventions.

**Aim:** To assess the level of knowledge regarding iodine deficiency among adolescents and to determine its association with selected demographic variables.

**Methods:** A quantitative research approach was adopted among adolescents. Data were collected using a structured knowledge questionnaire. Descriptive and inferential statistics were applied to analyze knowledge levels and their association with demographic variables.

**Results:** The findings revealed that 73% of adolescents had inadequate knowledge, while 27% had moderately adequate knowledge. A significant improvement in knowledge level was observed, and the hypothesis was accepted. Most demographic variables, including age, income, education, family type, and residence, showed no significant association. However, sex, religion, and dietary pattern were significantly associated with knowledge levels. These findings are consistent with studies by Adrienne Hatch-McChesney *et al.* (2022) and Zhifei Wo *et al.* (2024), which emphasize iodine deficiency as a global issue influenced by demographic and lifestyle factors.

**Conclusion:** The study concludes that adolescents have inadequate knowledge regarding iodine deficiency. Educational interventions are essential to improve awareness and should be incorporated into adolescent health programs.

**Keywords:** Iodine Deficiency, Adolescents, Knowledge, Awareness, Nutrition, Public Health.

## Introduction

The rapid proliferation of digital devices such as smartphones, tablets, and personal music players has brought the world to our fingertips, particularly influencing the younger population. Adolescents, being naturally curious and highly influenced by peers and media, are more likely to explore and adopt new technologies and lifestyle practices. This increased exposure highlights the

importance of understanding their behaviors and level of knowledge in key areas such as health and technology use. Gaining such insights is essential for promoting long-term well-being and for designing effective, targeted interventions to guide healthier choices among adolescents.

### **Objectives of the Study**

- To assess the level of knowledge on impact of long-term headphone use on hearing ability among adolescents.
- To assess the effect of long-term use of headphone on hearing ability among adolescents.
- To associate the level of knowledge on impact of long-term use of headphone among adolescents with their selected demographic variables

### **Assumptions and Delimitation**

#### **Assumptions**

- Long-term use of headphones may have an impact on the hearing ability of adolescents.
- Hearing ability can be affected by the duration, frequency, and volume of headphone use.

#### **Delimitation**

- The study is limited to adolescents (17-19 years) studying in a single selected college in Puducherry.
- The study is limited to students who use headphones.
- Duration of the study is 6 weeks.

### **Review of Literature**

Sections	No. of reviews
Literature review related to Knowledge on use of head phone and its complications	12
Literature review related to Impact of head phone usage on hearing ability among adolescents.	15
Literature review related to prevalence of use of head phone among adolescents.	11
Total	38

### **Research Methodology**

A quantitative research approach with a descriptive research design was adopted for the study. The research was conducted at Saratha Gangatharan Arts and Science College in Puducherry. The study population comprised adolescents aged 17–19 years who were studying at the college level in Puducherry. The sample included adolescents within the same age group from the selected Arts and Science College who met the inclusion criteria. A purposive sampling technique was used to select participants. The sample size was calculated using the formula  $n = Z^2 \times p \times (1-p) / d^2$ , where

$Z = 1.96$  at a 95% confidence level,  $p = 0.5$  (assumed for maximum variability), and  $d = 0.05$  (margin of error). Based on this calculation, the required sample size was 485, which was rounded off to 500 to account for possible non-responses.

### Criteria for Sample Selection

#### Inclusion Criteria

- Adolescents aged 17–19 years studying in a selected college
- Adolescents who are willing to participate and provide informed consent

#### Exclusion Criteria

- Adolescents with a pre-existing hearing disorder diagnosed prior to headphone usage
- Adolescents who have chronic ear infections or have undergone ear surgery in the past

### Description of Tool

#### Section A: Demographic variable of the adolescent.

This section consists of 13 Demographic variables such as Age, Gender, Course of Study, Year of Study, Type of Headphones Used Most Frequently, Features used in Headphones, Daily Duration of Headphone Use, Purpose of Headphone Use, Preferred Volume Level, Listening Environment, History of Previous Hearing Problems, Family History of Hearing Problems, Use of Earphones During Sleep.

#### Section B: Structured Knowledge Questionnaire on the use of headphones and its impact on hearing ability.

S. No	Level of Knowledge	Score
1.	Inadequate	Below 50
2.	Moderate	50-75
3.	Adequate	Above 75

#### Section C: Hearing Handicap Inventory Screening Version

Interpretation	Score
No hearing handicap	0-8
Mild to Moderate hearing handicap	10-22
Significant hearing handicap	24-40

The questionnaire consisted of 10 questions, each with three response options. The scoring system was structured such that a response of “Yes” was awarded 4 points, “Sometimes” was given 2 points, and “No” was assigned 0 points.

### Analysis and Interpretation of Data

<b>Section A</b>	Description of the demographic variable of the adolescent.
<b>Section B</b>	Assessment of the level of knowledge regarding the impact of long-term use of headphone among adolescents.
<b>Section C</b>	Association between the level of knowledge regarding the impact of long-term use of headphone among adolescent with selected demographic variables

#### **Section A: Distribution of the Demographic Variable of the Adolescent.**

The study included demographic data of adolescents (N = 500). The majority of participants (60.0%) were in the age group of 18.1–19 years, while 40.0% were between 17–18 years. In terms of gender, 60.0% were males and 36.0% were females. Regarding their course of study, 36.0% were enrolled in commerce, 30.0% in science, 24.0% in arts, and 10.0% in other disciplines. Most participants were first-year students (40.0%), followed by second-year (36.0%) and third-year (24.0%) students.

With respect to the impact of long-term headphone use, the majority of adolescents (76.8%) had no hearing handicap, while 22.6% experienced mild to moderate impairment. A small proportion (0.6%) had a significant hearing handicap, indicating that prolonged headphone use may negatively affect hearing ability.

#### **Major Findings of the Study**

The majority of participants (60.0%) were aged 18.1–19 years, while 40.0% were between 17–18 years, indicating a predominantly adolescent sample. Among the respondents, 64.0% were male and 36.0% were female, showing higher male representation in the study. The most common purpose for headphone use was gaming (41.0%), followed by watching videos (37.0%), academic purposes (10.0%), music (6.0%), and communication (6.0%). A notable 58.0% of participants preferred high volume levels, with 22.0% using headphones at maximum volume, while only a small proportion used moderate (12.0%) or low (8.0%) volume levels, indicating a potential risk for hearing damage. Additionally, a significant number of adolescents reported prolonged daily use of headphones: 32.0% used them for 2–3 hours, 30.0% for 1–2 hours, 22.0% for more than 3 hours, and only 16.0% for less than 1 hour. Overall, this shows that more than 80% of adolescents used headphones for over one hour daily.

#### **Discussion**

To assess the level of knowledge regarding the impact of long-term headphone use among adolescents, the findings revealed that the majority (81.4%) had a moderate level of knowledge. Only 14.6% of adolescents demonstrated an adequate level of knowledge, while a small proportion (4%) had inadequate knowledge. These results indicate that although most adolescents possess some awareness, there is still a need to improve their understanding. The findings are supported

by studies such as Dehankar *et al.* (2022), which reviewed the impact of prolonged audio device use on hearing, and Kang HJ (2021), who highlighted the risk of hearing loss among adolescents due to earphone use in noisy environments.

To associate the level of knowledge regarding the impact of long-term headphone use among adolescents with selected demographic variables, the study found a significant association between knowledge levels and factors such as age, gender, features used, daily duration of use, preferred volume level, listening environment, and use of earphones during sleep ( $p < 0.05$ ). These findings indicate that adolescents' awareness of hearing risks is strongly influenced by their personal listening behaviors and exposure patterns. The results are supported by Ayushi Tyagi *et al.* (2022), who reported similar associations between earphone usage habits and hearing impairment among college students.

### **Implication of the Study**

The findings of this study have significant implications for nursing practice, education, administration, and research, especially in awareness promotion and in preventive practices to protect hearing health among adolescents.

### **Nursing Practice**

The study emphasizes the vital role of nurses in educating adolescents, particularly those in ENT wards, about the harmful effects of long-term headphone use on hearing. Nurses can also screen for early signs of hearing impairment to prevent hearing handicap and enhance awareness through educational posters and bilingual (English and Tamil) information leaflets.

### **Nursing Education**

Nursing students should be trained to assess the impact of excessive headphone use on hearing and educated on prevention strategies, including safe volume levels and avoiding noisy environments.

### **Nursing Administration**

Administrators can organize awareness programs, ensure resources and training, and implement policies for routine hearing screening and health education in colleges.

### **Nursing Research**

The study supports further research on long-term headphone use and preventive measures, promoting evidence-based guidelines and safe, ethical research practices.

### **Recommendations**

- Conduct similar studies on larger and more diverse populations to improve generalizability.
- Perform comparative studies across different age groups and genders to identify risk patterns.

- Develop and distribute educational materials for adolescents, parents, and teachers on safe headphone use and early detection of hearing issues.
- Recommend year-wise hearing screening using a validated impact assessment questionnaire.

### Conclusion

The present study concluded that the majority of adolescents possess only a moderate level of knowledge about the impact of long-term use of headphones, with relatively few demonstrating adequate knowledge. This underscores the need for awareness programs to improve understanding of potential risks associated with prolonged headphone use. Furthermore, the study revealed a statistically significant association between gender and level of knowledge, suggesting that targeted educational interventions considering gender differences may be beneficial in enhancing awareness among adolescents

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# A CORRELATIONAL STUDY TO ASSESS THE LEVEL OF EMOTIONAL INTELLIGENCE WITH ASSERTIVENESS AMONG CHILDREN IN JOINT FAMILY VERSUS NUCLEAR FAMILY IN A SELECTED COMMUNITY AREA AT PUDUCHERRY

Sreelekshmi S. J

Department of Mental Health Nursing, SMVNC, Puducherry

## Abstract

**Background:** Emotional intelligence and assertiveness are crucial aspects of children's mental and social development, enabling them to manage emotions, build healthy relationships, and challenges effectively. Family structure, such as joint and nuclear families, plays a significant role in influencing these behavioral outcomes.

**Aim:** To assess the levels of emotional intelligence and assertiveness among children and to determine their association with family type.

**Methods:** A quantitative correlational research design was adopted. A total of 100 children aged 6–12 years (50 from joint families and 50 from nuclear families) were selected using purposive and random sampling techniques. Data were collected using a modified emotional intelligence questionnaire and assertiveness inventory. Descriptive and inferential statistics were used for analysis.

**Results:** The findings revealed that 50% of children had moderate emotional intelligence, 32% had high levels, and 18% had average levels. In terms of assertiveness, 59% had moderate levels, 13% high levels, and 28% average levels. Children from joint family's demonstrated higher emotional intelligence compared to those from nuclear families. However, the correlation between emotional intelligence and assertiveness was weak and not statistically significant. A significant association was found between family type and emotional intelligence.

**Conclusion:** The study concludes that family structure influences emotional intelligence among children, while its relationship with assertiveness remains weak. Promoting emotional and social skill development in children is essential for their overall well-being.

**Keywords:** Emotional Intelligence, Assertiveness, Children, Joint Family, Nuclear Family, Mental Health.

## Introduction

Mental health of children is a critical aspect of their overall development, yet it is often overlooked. Emotional Intelligence (EI) helps children understand and manage emotions, build empathy, and form healthy relationships. Assertiveness enables them to express needs respectfully, resist peer

pressure, and handle conflicts. Together, these skills strengthen resilience, self-esteem, and coping abilities. Family structure plays a significant role in shaping these behavioural traits during childhood. In India, both joint and nuclear family systems coexist, and each may influence children’s emotional and social development differently.

### **Statement of the Problem**

A correlational study to assess the level of emotional intelligence with assertiveness among children in joint family versus nuclear family in selected community area at Puducherry

### **Objectives of the Study**

- To assess the level of emotional intelligence and assertiveness among children
- To compare the level of emotional intelligence and assertiveness among joint family versus nuclear family children
- To correlate the emotional intelligence with assertiveness among joint family versus nuclear family children
- To associate the level of emotional intelligence and assertiveness among joint family versus nuclear family children with selected demographic variables

### **Assumption**

Children from both joint and nuclear families may have moderate levels of emotional intelligence and assertiveness.

### **Delimitations**

- The study was delimited to children in the age group from 6 to 12 years.
- The study was delimited to selected community area.
- Duration of the study was 6 weeks

### **Review of Literature**

<b>Sections</b>	<b>No. of Reviews</b>
Section A: Literature review related to Level of Emotional Intelligence	16
Section B: Literature review related to Level of Assertiveness	16
Section C: Literature review related to Level of Emotional Intelligence with Assertiveness among children in joint and nuclear family	11
Total	43

### **Research Methodology**

A quantitative research approach with a correlational research design was adopted for the study. The research was conducted in the Thirubuvanai community area, Puducherry. The population included all children aged 6 to 12 years residing in the selected community. The sample consisted of children from both joint and nuclear families who met the inclusion criteria. A total of 100 children were selected, with 50 from joint families and 50 from nuclear families. A purposive

sampling technique was initially used to select the families, followed by simple random sampling using the lottery method to choose the children for the study.

### Criteria for Sample Selection

#### Inclusion Criteria

- Children aged 6 to 12 years residing in Thirubuvanai community area, Puducherry
- Children whose parents provided consent to participate in the study
- Children selected by lottery method if more than one child was present in a family

#### Exclusion Criteria

- Children who were not available during data collection
- Children who could not speak or understand Tamil or English
- Children with mental or physical disabilities

### Description of the tools

#### Section A: Demographic variables

The demographic variables consist of the age, gender, religion, area of residence, number of siblings, type of family, nature of residency, family income and participation in extracurricular activities

#### Section B: Modified trait emotional intelligence questionnaire -child form

It consists of 20 questions focused to assess the Children's emotional intelligence each question has the scale score represents 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always.

#### Scoring Interpretation

S. No	Score	Interpretation
1.	80-100	High Emotional Intelligence
2.	60-79	Moderate Emotional Intelligence
3.	40-59	Average Emotional Intelligence
4.	20-39	Low Emotional Intelligence

#### Section C: Modified assertiveness inventory for children

It consists of 20 questions focused to assess the Children's assertive behaviour. Each question has the scale score represents 1 = Never, 2 = rarely, 3 = Sometimes, 4 = Often, 5 = Always.

#### Scoring Interpretation

S. No	Score	Interpretation
1.	80-100	Highly Assertive
2.	60-79	Moderately Assertive
3.	40-59	Averagely Assertive
4.	20-39	Low Assertive

### Data Collection Procedure

Formal permission was obtained prior to the study. Written informed consent and assent were obtained from the participants. Families were selected using a purposive sampling technique, and children were selected using a simple random sampling technique through the lottery method. A total of 50 children each from joint families and nuclear families were included in the study. Demographic data were collected from all participants. Emotional intelligence and assertiveness were assessed using appropriate tools. Confidentiality of the information was maintained throughout the study.

### Analysis and Interpretation of Data

Section A:	Description of the demographic variables of children.
Section B:	Assessment on the level of emotional intelligence and assertiveness among children from joint family and nuclear family
Section C:	Comparison between the level of emotional intelligence and assertiveness among children from joint family versus nuclear family
Section D:	Correlation between the emotional intelligence and assertiveness among children from joint family versus nuclear family
Section E:	Association between the level of emotional intelligence and level of assertiveness among children with selected demographic variables.

#### Section A: Description of the demographic variables of children

Among the children, 30% were aged 6–7 years, while the majority (70%) were between 9–12 years. In terms of gender, 45% were male and 55% were female, with none identifying as transgender. Most children (90%) followed Hinduism, while 8% were Christian and 2% were Muslim, with no representation from other religions. Regarding family structure, 65% had one sibling, 21% had two siblings, and 14% had more than two siblings, with none being only children. A majority (68%) lived in permanent residences, while 32% were migrants. In terms of family income, 39% belonged to families earning Rs. 15,001–20,000, 30% earned Rs. 10,001–15,000, 18% earned more than Rs. 20,000, and 13% earned up to Rs. 10,000. Most children participated in extracurricular activities, with 39% involved in arts, 36% in academic clubs, and 24% in sports, while only 1% did not engage in any activities.

#### Section B: Assessment on the level of emotional intelligence and assertiveness among children from joint family and nuclear family (N=100)

##### Distribution of children according to the level of emotional intelligence

S. No	Level of Emotional Intelligence	Frequency	Percentage
1.	High Emotional Intelligence	32	32
2.	Moderate Emotional Intelligence	50	50
3.	Average Emotional Intelligence	18	18

**Distribution of children according to the level of assertiveness**

S. No	Level of Assertiveness	Frequency	Percentage
1.	Highly Assertive	13	13
2.	Moderately Assertive	59	59
3.	Averagely Assertive	28	28

**Section B: Assessment on the level of emotional intelligence and assertiveness among children from joint family and nuclear family. N=100**

**Distribution of children according to the level of emotional intelligence.**

S. No	Level of Emotional Intelligence	Frequency	Percentage
1.	High Emotional Intelligence	32	32
2.	Moderate Emotional Intelligence	50	50
3.	Average Emotional Intelligence	18	18

**Distribution of children according to the level of assertiveness**

S. No	Level of Assertiveness	Frequency	Percentage
1.	Highly Assertive	13	13
2.	Moderately Assertive	59	59
3.	Averagely Assertive	28	28

**Section C: Comparison between the level of emotional intelligence and assertiveness among children from joint family versus nuclear family. N= 100**

**Comparison between the levels of emotional intelligence among children from joint family versus nuclear family**

S. No	Level of Emotional Intelligence	Nuclear Family		Joint Family	
		Frequency	Percentage	Frequency	Percentage
1.	High Emotional Intelligence	4	8	28	56
2.	Moderate Emotional Intelligence	31	62	19	38
3.	Average Emotional Intelligence	15	30	3	6

**Comparison between the level of assertiveness among children from joint family versus nuclear family. N= 100**

S. No	Level of Assertiveness	Nuclear Family		Joint Family	
		Frequency	Percentage	Frequency	Percentage
1.	Highly Assertive	9	18	4	8
2.	Moderately Assertive	28	56	31	62
3.	Averagely Assertive	13	26	15	30

### **Section D: Correlation of emotional intelligence with assertiveness among children from joint family versus nuclear family**

Correlation		‘r’ value	P value
Emotional Intelligence	Nuclear Family vs Joint Family	0.166	0.248
Assertiveness	Nuclear Family vs Joint Family	-0.209	0.146

These results indicate that the relationship between emotional intelligence and assertiveness among children from different family structures is weak and not significant

### **Section E: Association between the level of emotional intelligence and level of assertiveness among children with selected demographic variables**

Level of Emotional Intelligence & Assertiveness among children have only a significant association with the type of family.

The other selected demographic variables did not show any significant association with the Level of Emotional Intelligence & Assertiveness

#### **Major Findings of the Study**

The present study revealed that the majority of children (50%) had moderate emotional intelligence, indicating balanced emotional awareness and regulation, while 32% exhibited high emotional intelligence and 18% showed average levels. Regarding assertiveness, most children (59%) demonstrated a moderate level, 13% had high assertiveness, and 28% showed average levels, reflecting variability in assertive behavior. Children from joint families showed a higher proportion of high emotional intelligence (56%), followed by 38% with moderate and 6% with average levels. In contrast, children from nuclear families had 8% with high emotional intelligence, 62% with moderate, and 30% with average levels. In terms of assertiveness, children from nuclear families showed 18% with high levels, 56% moderate, and 26% average levels, whereas children from joint families had 8% high, 62% moderate, and 30% average levels.

#### **Discussion**

The first objective of the study was to assess the level of emotional intelligence and assertiveness among children. The findings showed that 32% of children had high emotional intelligence, 50% had moderate levels, and 18% had average levels. In terms of assertiveness, 13% had high levels, 59% moderate, and 28% average. These findings are supported by Lucas-Mangas SE *et al.* (2022) and AL-Qadri AH and Zhao W (2021), who emphasized the role of emotional intelligence in psychological well-being and academic development.

The second objective compared emotional intelligence and assertiveness among children from joint and nuclear families. Children from joint families showed higher emotional intelligence (56% high) compared to nuclear families (8% high). However, assertiveness levels were slightly higher

among children from nuclear families. These findings are supported by Niyogi J *et al.* (2020), highlighting the influence of family environment on psychological development.

The third objective examined the association between emotional intelligence, assertiveness, and demographic variables. A significant association was found between family type and emotional intelligence, while no significant association was observed with assertiveness. This aligns with studies by Sharma P and Raina RL (2024), and Pades-Jiménez A (2021).

### **Implications of the Study**

#### **Nursing Practice:**

Nurses can assess emotional intelligence and assertiveness during routine child health assessments and provide counselling to children and parents to support emotional and social development.

#### **Nursing Education:**

Emotional intelligence and assertiveness can be incorporated into pediatric and community health nursing curricula, with training on assessment tools and strategies to promote psychosocial development in children.

#### **Nursing Administration:**

Nursing administrators can organize mental wellness programs, workshops, and training sessions for nurses, and collaborate with schools and community organizations to promote children's emotional and social well-being.

### **Recommendations**

Future studies should be conducted with larger and more diverse samples to enhance the generalizability of the findings across different populations and settings. Comparative studies between children from various age groups, genders, and family structures can provide deeper insights into the factors influencing emotional intelligence and assertiveness. It is also recommended to develop and distribute structured educational materials for parents, caregivers, and teachers focusing on the promotion of emotional intelligence and assertiveness in children. Awareness programs and workshops can be organized to help parents understand their crucial role in shaping children's emotional and communication skills. Additionally, future research can explore other influencing factors such as parenting style, socioeconomic status, and peer interactions.

### **Conclusion**

The study concludes that the majority of children demonstrate moderate levels of emotional intelligence and assertiveness, indicating a fairly balanced development of emotional and social skills. Children from joint families were found to have higher emotional intelligence compared to those from nuclear families, suggesting that family environment plays a significant role in

emotional development. A statistically significant association was observed between family type and emotional intelligence, whereas no significant association was found between family type and assertiveness. These findings emphasize the importance of fostering supportive family environments and implementing early interventions to enhance children’s emotional and behavioral development.

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# A STUDY TO ASSESS THE EFFECTIVENESS OF IMPLEMENTING OXYGEN SUPPLEMENTATION AND MONITORING PROTOCOL FOR CHILDREN WITH BRONCHIOLITIS AT SELECTED HOSPITAL, PUDUCHERRY

Soundarya K

Department of Child Health Nursing, SMVNC, Puducherry

## Abstract

**Background:** Bronchiolitis is a common lower respiratory tract infection in children, mainly caused by Respiratory Syncytial Virus (RSV). It leads to respiratory distress and reduced oxygen saturation, requiring prompt management. Oxygen therapy is the cornerstone of treatment, and a structured supplementation and monitoring protocol can improve outcomes and prevent complications.

**Aim:** To assess the effectiveness of implementing oxygen supplementation and monitoring protocol among children with bronchiolitis and to determine its association with selected demographic variables.

**Methods:** A quantitative research approach with a pre-experimental one-group pre-test and post-test design was adopted. The study was conducted among 40 children aged 6 months to 12 years diagnosed with bronchiolitis using convenience sampling. Data were collected using a structured checklist to assess practice before and after implementation of the protocol. Descriptive and inferential statistics were used for analysis.

**Results:** The findings revealed a significant improvement in practice after implementation of the protocol. In the pre-test, most showed poor and good practice, whereas in the post-test, 100% demonstrated excellent practice. Improvement was also observed in respiratory parameters such as SpO<sub>2</sub> levels and reduction in respiratory distress.

**Conclusion:** The study concludes that implementing a structured oxygen supplementation and monitoring protocol significantly improves nursing practice and respiratory outcomes in children with bronchiolitis. It enhances patient safety and quality of care.

**Keywords:** Bronchiolitis, Oxygen Supplementation, Monitoring Protocol, Pediatric Care, Respiratory Distress.

## Introduction

Bronchiolitis is a common viral lower respiratory tract infection affecting infants and young children, most often caused by RSV. It leads to inflammation, edema, and mucus accumulation in

the small airways, resulting in obstruction and impaired gas exchange. Children typically present with cough, wheezing, tachypnea, nasal flaring, and respiratory distress, with severity ranging from mild illness to severe respiratory compromise, especially in high-risk groups such as preterm infants. Oxygen therapy is the mainstay of treatment, with low-flow oxygen used in mild to moderate cases, while advanced methods like High Flow Nasal Cannula (HFNC) and Continuous Positive Airway Pressure (CPAP) are used in severe cases to improve oxygenation and reduce the work of breathing. Continuous monitoring of oxygen saturation and vital signs is essential for early detection of deterioration and prevention of complications. Implementing structured oxygen supplementation and monitoring protocols ensures standardized, safe, and effective care, ultimately improving clinical outcomes and reducing hospital stay.

### **Statement of the Problem**

A study to assess the effectiveness of implementing oxygen supplementation and monitoring protocol for children with bronchiolitis at selected hospital, Puducherry.

### **Need for the Study**

Bronchiolitis is a leading cause of hospitalization among children under 2 years, with most cases caused by RSV. Improper oxygen administration and lack of monitoring can increase complications and prolong hospital stay. Since oxygen is considered a drug, its administration must be carefully regulated. A structured protocol helps ensure safe delivery, early detection of hypoxemia, and improved clinical outcomes.

### **Objectives of the Study**

- To assess the effectiveness of oxygen supplementation among children with bronchiolitis
- To evaluate the effectiveness of oxygen supplementation and monitoring protocol
- To associate the effectiveness with selected demographic variables

### **Operational Definitions**

- Assess: Systematic evaluation of effectiveness using a checklist
- Effectiveness: Improvement in SpO<sub>2</sub>, respiratory distress, and practice scores
- Implementation: Application of oxygen protocol in clinical setting
- Oxygen Supplementation and Monitoring: Administration and continuous observation of oxygen therapy parameters
- Children: Patients aged 6 months to 12 years with bronchiolitis
- Protocol: Structured guidelines for oxygen therapy

## Review of Literature

Classification	No. of reviews	
	Journals	Webmax
Section a: literature review related to implementing oxygen supplementation	4	4
Section b: a review related to bronchiolitis in children	5	3
Section b: literature review related implementing oxygen supplementation and monitoring protocol	5	3
Total	14	10

## Research Methodology

A quantitative approach with a pre-experimental one-group pre-test and post-test design was used. The study was conducted at SMVMCH among children with bronchiolitis. A sample of 40 children aged 6 months to 12 years was selected using convenience sampling.

## Inclusion Criteria

- Children aged 6 months to 12 years
- Diagnosed with bronchiolitis

## Exclusion Criteria

- Children not willing to participate
- Children not receiving oxygen therapy

## Description of tool

Section A: Demographic data which comprises of variables like age, sex, birth order, religion, type of family, family income, family history of respiratory problem, previous respiratory illness, duration of hospital stay, type of oxygen administration.

Section B: Practice points in checklist based on oxygen supplementation and monitoring protocol was used to assess the practice among children in Sri Manakula Vinayagar medical college and hospital.

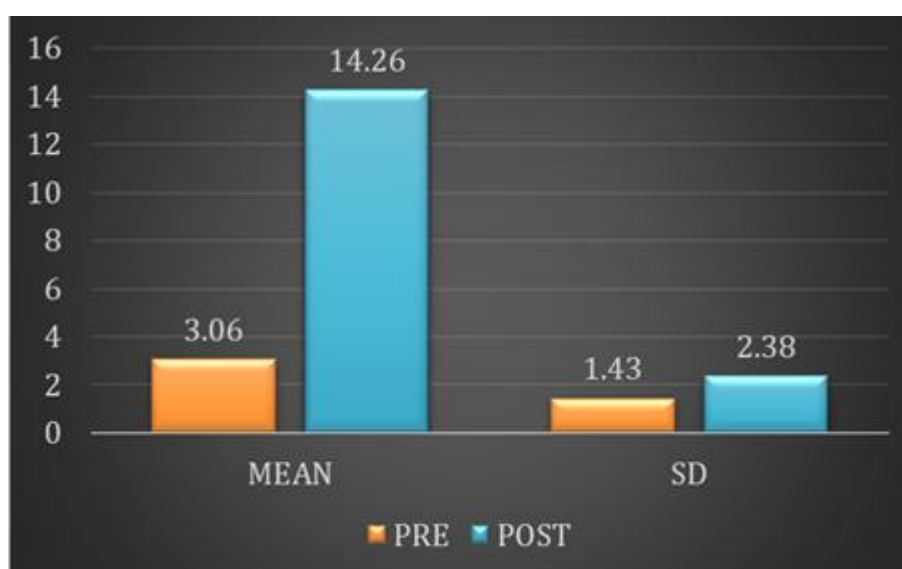
Scoring Interpretation	
1	Poor practice
2-8	Good practice
9-15	Excellence practice

**Frequency and percentage wise distribution of level of practice regarding oxygen supplementation and monitoring protocol among children with bronchiolitis**

Practice	Pre-test		Post-test	
	F	%	F	%
Poor practice	2	68	0	0
Good practice	3	15	0	0
Excellence practice	11	17	40	100

**Mean and Standard Deviation of effectiveness of oxygen supplementation among children**

Test	Mean	Sd	‘t’-test
Pre	3.06	1.43	1.38



**Discussion**

The present study showed that implementing an oxygen supplementation and monitoring protocol significantly improved the respiratory status of children with bronchiolitis. Post-test findings revealed better SpO<sub>2</sub> levels, reduced respiratory rate, and decreased signs of respiratory distress compared to pre-test values. The structured protocol helped in proper oxygen administration and early detection of hypoxemia. The study findings support that standardized oxygen monitoring improves patient safety and enhances quality of care in children with bronchiolitis

**Implications of the Study**

**Nursing Practice:**

- Nurses in hospital, clinical, and community settings should integrate health education into their practice.
- Nurses can use this study to educate and instruct about oxygen supplementation and monitoring protocol in children.

### **Nursing Education:**

- Nursing students should receive training to handle children with bronchiolitis.
- Students should learn to identify difficulties, promote comfort, and ensure well-being of children.

### **Nursing Administration:**

- Administrators can develop policies to implement awareness and training on oxygen supplementation and monitoring protocol.

### **Nursing Research:**

- The study highlights the assessment of staff practice (good, excellent) regarding oxygen supplementation.
- Further research can replicate this study to promote standardized practice in other hospitals.

### **Recommendations:**

- Conduct similar studies in hospitals. Evaluate staff for excellence in practicing oxygen supplementation and monitoring protocol.
- Implement structured training programs for nurses based on study findings.

### **Conclusion**

The study assessed the effectiveness of an oxygen supplementation and monitoring protocol for children with bronchiolitis. Pre-test and post-test evaluation showed that nursing practice improved significantly after protocol implementation. The number of staff following good and excellent practice increased, while poor practice decreased. Improved practice ensured accurate oxygen delivery, regular monitoring, timely interventions, and safe weaning from oxygen. Overall, the structured protocol enhanced the quality of care and directly benefited children's health. The study highlights the importance of standardized protocols in improving nursing practice and patient safety.

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# **A STUDY TO ASSESS THE EFFECTIVENESS OF NURSING CARE INTERVENTION AMONG ANTENATAL MOTHERS WITH ANTEPARTUM HEMORRHAGE ADMITTED AT SELECTED HOSPITALS, PUDUCHERRY**

**P. Victoriya**

Department of Obstetrics and Gynecological Nursing,  
Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

### **Background:**

Antepartum Hemorrhage (APH) is a serious obstetric condition occurring after 24–28 weeks of pregnancy and before labor, contributing significantly to maternal and fetal morbidity and mortality. Complications such as anemia, shock, postpartum hemorrhage, intrauterine death, and low birth weight are commonly associated with APH. Timely and effective nursing care plays a crucial role in reducing complications and improving outcomes.

**Aim:** To assess the effectiveness of nursing care intervention in reducing the severity of symptoms among antenatal mothers with antepartum hemorrhage.

**Methods:** A quantitative approach with a quasi-experimental pre-test and post-test design was adopted. The study was conducted among 30 antenatal mothers with APH selected through convenience sampling. A structured questionnaire was used to assess symptom severity before and after the intervention. Descriptive and inferential statistics were used for analysis.

**Results:** The findings revealed a significant reduction in symptom severity following the intervention. The mean pre-test score was 32.87 (SD = 5.563), which decreased to 19.70 (SD = 3.923) in the post-test. The paired 't' test showed a highly significant difference ( $p = 0.001$ ). A significant association was also found between post-test outcomes and selected demographic variables such as educational status.

**Conclusion:** The study concludes that nursing care intervention is effective in reducing the severity of symptoms among antenatal mothers with APH and plays a vital role in improving maternal outcomes.

**Keywords:** Antepartum Hemorrhage, Nursing Care Intervention, Antenatal Mothers, Maternal Health.

## **Introduction**

Antepartum hemorrhage is defined as bleeding from the genital tract after 24 weeks (or 20 weeks by some authors) of pregnancy and before the onset of labor. It is a major obstetrical emergency associated with complications such as anemia, malpresentation, postpartum hemorrhage, shock, low birth weight, intrauterine death, and birth asphyxia.

## **Need for the Study**

Globally, maternal mortality remains a significant concern. According to the World Health Organization, approximately 600,000 women die annually due to pregnancy-related complications, with 99% of deaths occurring in developing countries. Placenta previa complicates about 4.8 per 100 deliveries and can be fatal. These statistics highlight the importance of timely and effective nursing interventions in managing APH.

## **Objectives of the Study**

- To assess the severity of antepartum hemorrhage among antenatal mothers
- To evaluate the effectiveness of nursing care interventions in reducing symptoms and preventing complications
- To associate the effectiveness of nursing care with selected demographic variables

## **Hypotheses**

- **H1:** There is a significant difference between pre-test and post-test severity levels of APH
- **H2:** There is a significant association between post-intervention outcomes and selected variables

## **Research Methodology**

A pre-experimental research design was adopted. The study was conducted among 30 antenatal mothers with APH admitted to selected hospitals in Puducherry. Convenient sampling technique was used.

## **Description of Tool**

- **Section A:** Demographic variables (age, education, income, gravida, parity, etc.)
- **Section B:** Structured checklist to assess severity of APH symptoms

## **Data Collection Procedure**

Formal permission was obtained prior to data collection. Informed consent was taken from participants. A pre-test was conducted using a structured questionnaire, followed by nursing care intervention. Post-test assessment was carried out to evaluate effectiveness. Confidentiality was maintained throughout the study.

## Results

**Table 1: Effectiveness of Nursing Care Intervention (Pre-test vs Post-test)**

Variable	Mean	SD	t-value	p-value
Pre-test	32.87	5.563		
Post-test	19.70	3.923	20.639	0.001*

\*Highly Significant

The results indicate a statistically significant reduction in severity scores after intervention.

**Table 2: Severity Level Distribution**

Severity Level	Pre-test (%)	Post-test (%)
Mild	0%	76.7%
Moderate	33.3%	23.3%
Severe	66.7%	0%

## Discussion

The study findings revealed that during the pre-test, the majority of antenatal mothers experienced severe symptoms, indicating a high level of risk and discomfort associated with Antepartum Hemorrhage. Following the implementation of nursing care interventions, the post-test results showed a marked improvement, with most mothers shifting from severe and moderate symptom categories to mild levels. This reduction highlights the positive impact of timely and structured nursing care. The paired t-test analysis demonstrated a highly significant difference between pre-test and post-test scores, statistically confirming the effectiveness of the intervention. Furthermore, a significant association was observed between selected demographic variables—such as educational status—and post-test outcomes, suggesting that these factors may influence the effectiveness of care and recovery process.

## Implications of the Study

### Nursing Education

The findings highlight the importance of strengthening theoretical and clinical knowledge among nursing students regarding the management of Antepartum hemorrhage. Nurse educators should incorporate updated evidence-based content, simulation-based learning. Regular workshops, skill training sessions, and clinical demonstrations can help students develop critical thinking, emergency management skills, and confidence in handling obstetric emergencies effectively.

### Nursing Practice

In clinical practice, the study emphasizes the role of nurses in early identification, prompt intervention, and continuous monitoring of antenatal mothers with complications. Nurses should

be trained to assess warning signs, implement emergency care measures, and provide emotional support to patients and families. Effective nursing care interventions can significantly reduce maternal and fetal risks, improve patient outcomes, and ensure safe and quality obstetric care.

### **Nursing Administration**

Nurse administrators play a key role in ensuring the availability of standardized protocols and guidelines for managing antepartum hemorrhage. Hospitals should implement regular in-service education programs, emergency drills, and competency assessments for staff nurses.

### **Nursing Research**

The study emphasizes the need for further research with larger sample sizes and diverse populations to enhance the generalizability of findings. Comparative studies, interventional research, and multicenter trials can help establish stronger evidence-based guidelines for managing antepartum hemorrhage.

### **Limitations**

- Small sample size (N=30)
- Limited to selected hospitals in Puducherry
- Short duration of intervention

### **Recommendations**

- Conduct studies with larger samples
- Comparative studies between interventions
- Long-term follow-up studies
- Replication in different healthcare settings

### **Conclusion**

The study concludes that nursing care interventions are highly effective in reducing the severity of antepartum hemorrhage among antenatal mothers. The findings emphasize the importance of timely, evidence-based nursing care in improving maternal outcomes and preventing complications. Strengthening nursing protocols and education is essential for better maternal healthcare.

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## **A STUDY TO ASSESS THE EFFECTIVENESS OF POSTOPERATIVE NURSING CARE ON PREVENTION OF COMPLICATIONS AMONG PATIENTS UNDERGOING CHOLECYSTECTOMY AT A SELECTED HOSPITAL, PUDUCHERRY**

**V. Jeevitha**

Department of Medical and Surgical Nursing,  
Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** Cholelithiasis is a common disorder of the hepatobiliary system characterized by the formation of gallstones due to altered metabolism of cholesterol, bile acids, and bilirubin. Cholecystectomy is the standard treatment; however, postoperative pain and complications remain significant concerns affecting patient recovery.

**Objectives:** To assess the level of pain among patients undergoing cholecystectomy, evaluate the effectiveness of postoperative nursing care, and determine the association between pain levels and selected demographic variables.

**Methods:** A quantitative evaluative research approach was adopted. A total of 30 patients undergoing cholecystectomy were selected using a convenient sampling technique. Data were collected using structured questionnaires and a numerical rating scale for pain assessment. Postoperative nursing intervention, including hot application, was administered.

**Results:** The study findings revealed a significant reduction in pain levels following the implementation of postoperative nursing interventions. The intervention proved effective in minimizing pain and preventing complications.

**Conclusion:** Postoperative nursing care, particularly hot application, is effective in reducing pain and enhancing recovery among patients undergoing cholecystectomy.

**Keywords:** Cholelithiasis, Cholecystectomy, Postoperative Care, Nursing Intervention, Pain Management.

### **Introduction**

Cholelithiasis is a chronic and recurrent disease characterized by the formation of gallstones within the gallbladder. It results from an imbalance in the composition of bile, particularly cholesterol, bile acids, and bilirubin. Gallstones are broadly classified into cholesterol stones and pigment stones, with the latter formed due to excess unconjugated bilirubin.

The condition is highly prevalent worldwide, affecting approximately 6% of men and 10% of women in developed countries. In India, it is more common among females aged 30–50 years.

Risk factors include advancing age, female gender, obesity, pregnancy, liver disease, genetic predisposition, and high-fat dietary intake.

Patients with cholelithiasis often present with right upper quadrant abdominal pain, nausea, vomiting, and sometimes jaundice. Laparoscopic cholecystectomy is the preferred treatment due to its minimal invasiveness and faster recovery. However, postoperative complications and pain remain major concerns requiring effective nursing management.

### **Need for the Study**

Gallstone disease is more prevalent among cirrhotic patients compared to non-cirrhotic individuals. Globally, millions are affected, with higher incidence in women. In India, lifestyle and dietary patterns contribute significantly to the occurrence of cholelithiasis.

Postoperative pain is a major challenge following cholecystectomy. Non-pharmacological interventions such as hot application may help reduce pain and improve patient comfort. Therefore, this study was undertaken to evaluate the effectiveness of postoperative nursing care in preventing complications and reducing pain.

### **Objectives**

- To assess the level of pain among patient undergoing cholecystectomy surgery
- To evaluate the effectiveness of post-operative nursing care among patient underwent cholecystectomy.
- To associate the level of pain among patient underwent cholecystectomy with their selected demographic variable.

### **Assumption**

Hot application may be an effective method in reducing pain among patient undergoing cholecystectomy.

### **Review of literature**

The literature review was organized into three sections:

**Section A:** Studies related to prevalence and risk factors of Cholelithiasis.

**Section B:** Studies on pharmacological and non-pharmacological pain management methods.

**Section C:** Studies related to nursing interventions such as hot application.

### **Methodology**

#### **Research Approach and Design**

A quantitative evaluative research approach with a Pre experimental design (one group pre- test and post-test design)

#### **Setting**

The study was conducted in a selected hospital in Puducherry.

### Population and Sample

The study population included patients undergoing cholecystectomy. A sample of 30 patients was selected using Purposive Sampling Technique.

### Inclusion Criteria

- Patient who are undergoing cholecystectomy surgery.
- Patient who are available and at time of data collection.
- Who can follow command in Tamil and English.

### Exclusion Criteria

- Patient who are not willing to participated in the study.
- Patient who are contraindication to hot application.

### Description of the tool

#### Section A: Demographic Variables

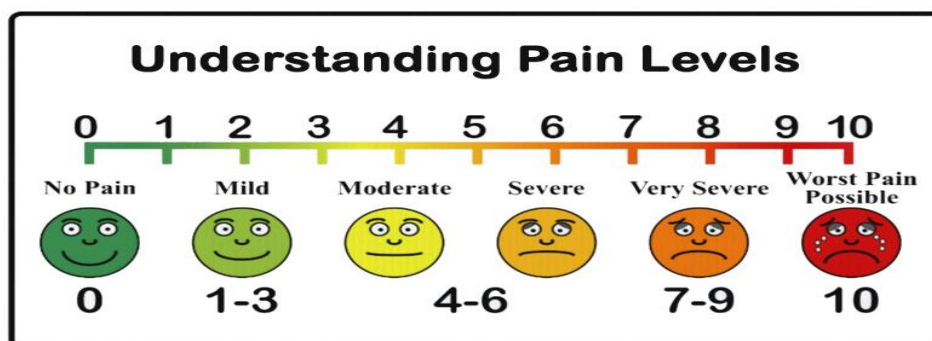
Includes age, gender, occupation, education, religion, family type, income, and dietary pattern.

#### Section B: Clinical Variables

Includes history of illness, previous surgeries, symptoms, location, and nature of pain.

#### Section C: Pain Assessment

Pain was assessed using a Numerical Rating Scale (NRS), where patients rated their pain intensity.



### Scoring and Interpretation

Level of Pain	Score
No Pain	(0)
Mild Pain	(1-3)
Moderate Pain	(4-6)
Severe Pain	(7-9)
Worst possible Pain	(10)

### Data Collection Procedure

Data were collected after obtaining ethical clearance and informed consent. Pre-test pain assessment was done, followed by administration of postoperative nursing intervention (hot application). Post-test assessment was conducted to evaluate effectiveness.

### **Data Analysis and Interpretation**

Data were analyzed using both descriptive and inferential statistics. Frequency and percentage were used to describe the demographic variables of the participants. Mean and standard deviation were calculated to assess the pain scores. The paired t-test was applied to compare pre-test and post-test scores, while the chi-square test was used to determine the association between selected variables.

### **Results**

The findings indicated a significant reduction in pain levels after the intervention. The postoperative nursing care was effective in preventing complications and improving patient comfort.

### **Discussion**

The study findings are consistent with previous studies indicating that non-pharmacological interventions such as hot application can significantly reduce postoperative pain. Effective nursing care plays a crucial role in improving patient outcomes.

### **Nursing implications**

#### **Nursing Practice**

- The role of the nurse will help to provide the selected nursing interventions on patients undergone cholecystectomy.
- The nurse must be taught to assess the pain by using the numerical scale in accurate manner.

#### **Nursing Education**

- Teach the students regarding the importance and effectiveness of selected nursing interventions on patients undergone cholecystectomy.
- Provide exposure to various alternative selected therapies and encourage the student to participate in the specialization and expand their carrier.

#### **Nursing Administration**

- Continuing education program and in-service education program can be conducted regarding the selected nursing interventions on patients undergone cholecystectomy.
- Nurses should be encouraged to provide the selected nursing interventions on patients undergone cholecystectomy.
- Provide opportunity and also adequate time for nurses to attend training program.
- Nurse administrator helps to evaluate the patient satisfactions periodically.

## Recommendations

- Similar study can be conducted with large samples for better generalization.
- Similar study can be conducted in different settings.
- Similar study can be conducted as structures teaching programme.

## Conclusion

The study concludes that postoperative nursing interventions, particularly hot application, effectively reduce pain among patients undergoing Cholecystectomy. Heat application improves blood circulation, relieves muscle spasm, and enhances patient comfort, leading to better pain management. Additionally, it helps prevent complications by promoting early mobility and faster recovery. Incorporating such interventions into routine nursing care improves overall patient outcomes and quality of care.

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# A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE ON ETHICAL SENSITIVITY REGARDING PATIENT'S CARE AMONG STAFF NURSES AT SMVMCH, PUDUCHERRY

**D. Suvathi**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

**Background:** Ethical Sensitivity is the ability to recognize and respond to ethical issues in clinical practice. In nursing, it plays a vital role in ensuring safe, effective, and patient-centered care. Nurses often face ethical dilemmas related to confidentiality, informed consent, and decision-making, making it essential to assess and enhance their ethical awareness.

**Aim:** To assess the level of knowledge regarding ethical sensitivity among staff nurses and to determine its association with selected demographic variables.

**Methods:** A quantitative research approach was adopted. The study was conducted among 100 staff nurses at SMVMCH, Puducherry, selected using a convenience sampling technique. A self-structured questionnaire based on a five-point Likert scale was used to assess knowledge. Data were analyzed using descriptive and inferential statistics, including percentage distribution and chi-square test.

**Results:** The findings revealed that 11% of staff nurses had a high level of knowledge, 68% had a moderate level, and 21% had a mild level of knowledge regarding ethical sensitivity. A statistically significant association was found between knowledge level and selected demographic variables such as frequency of encountering ethical problems ( $p < 0.01$ ), as well as age and educational status ( $p < 0.05$ ).

**Conclusion:** The study concludes that most staff nurses have a moderate level of knowledge regarding ethical sensitivity, indicating the need for continuous education and training to improve ethical decision-making and patient care quality.

**Keywords:** Ethical Sensitivity, Knowledge, Staff Nurses, Patient Care, Nursing Ethics.

## **Introduction**

Ethical sensitivity refers to the ability to identify ethical issues and evaluate their importance in clinical situations. In nursing practice, it plays a crucial role in ensuring safe, high-quality, and patient-centered care. Nurses frequently encounter ethical dilemmas such as end-of-life decisions, confidentiality, and informed consent, making ethical awareness essential in clinical settings.

### **Need for the Study**

At the global level, organizations such as the World Health Organization and the International Council of Nurses emphasize ethical sensitivity as a key component of quality healthcare. At the national level in India, the Indian Nursing Council mandates ethical principles in nursing practice; however, gaps remain in practical implementation.

At the state and local level, particularly in Puducherry, multicultural patient populations and high clinical workload increase ethical challenges, highlighting the need for assessing ethical knowledge among staff nurses.

### **Objectives of the Study**

- To assess the level of knowledge regarding ethical sensitivity among staff nurses
- To associate the level of knowledge with selected demographic variables

### **Operational Definitions**

- **Assess:** Determining the knowledge level of staff nurses regarding ethical sensitivity
- **Level of Knowledge:** Knowledge, skills, and attitudes related to ethical sensitivity
- **Ethical Sensitivity:** Awareness of ethical values, conflicts, and responsibilities in patient care
- **Patient Care:** Holistic care addressing physical, mental, spiritual, and moral aspects

### **Review of Literature**

A quantitative study conducted in Hong Kong (2023) among 293 nurses revealed that ethical sensitivity significantly influences caring efficacy and mediates the relationship between ethical climate and nursing performance, emphasizing the importance of ethical awareness in improving care quality.

### **Research Methodology**

A quantitative descriptive research design was adopted for the study to systematically assess the level of knowledge regarding Ethical Sensitivity among staff nurses. The study was conducted at SMVMCH, Puducherry, involving a total of 100 staff nurses selected from various clinical departments. This design enabled the researcher to describe and analyze the existing level of knowledge and its distribution among participants without manipulating any variables. The approach also facilitated the use of structured tools and statistical methods to obtain reliable and objective data.

### **Description of the Tool**

**Section A:** Socio-demographic variables (age, gender, education, experience, etc.)

**Section B:** Self-structured questionnaire using a 5-point Likert scale to assess knowledge on ethical sensitivity

## Data Analysis

Data were analyzed using descriptive and inferential statistics. Frequency, percentage, and chi-square tests were applied to assess knowledge levels and their association with demographic variables.

## Results

**Table 1: Distribution of Knowledge Level (N = 100)**

Level of Knowledge	Frequency	Percentage
High	11	11%
Moderate	68	68%
Mild	21	21%

## Discussion

The findings revealed that the majority (68%) of staff nurses had a moderate level of knowledge regarding Ethical Sensitivity, while only 11% demonstrated a high level and 21% had a mild level of knowledge. This indicates that although nurses possess a basic understanding of ethical principles, there is a noticeable gap in advanced ethical awareness and critical decision-making skills required in complex clinical situations. Further analysis showed a statistically significant association between knowledge level and selected demographic variables such as the frequency of encountering ethical problems ( $p < 0.01$ ), as well as age and educational status ( $p < 0.05$ ). This suggests that increased exposure to ethical issues and higher education levels may enhance ethical sensitivity among nurses.

## Implications of the Study

### Nursing Education:

Nurse educators should emphasize structured, evidence-based ethical training programs within the curriculum. Incorporating case-based learning, simulations, and discussions on real-life ethical dilemmas can help nursing students and staff develop critical thinking and ethical decision-making skills. Continuous education programs and workshops should also be conducted to keep nurses updated on ethical standards and professional guidelines.

### Nursing Practice:

In clinical settings, nurses should actively apply ethical principles in patient care by acting as educators, advocates, and counselors. They play a key role in maintaining patient confidentiality, obtaining informed consent, and ensuring respectful communication. Enhancing ethical sensitivity in practice can improve patient trust, safety, and overall quality of care.

### **Nursing Administration:**

Hospital administrators should establish and reinforce ethical policies and guidelines within healthcare institutions. Regular in-service training, supervision, and monitoring should be implemented to ensure adherence to ethical standards. Administrators can also promote a supportive environment where nurses feel confident in addressing ethical concerns and reporting issues without fear.

### **Nursing Research:**

The study provides a strong foundation for further research on ethical sensitivity in nursing. Future studies can explore the effectiveness of different educational interventions, compare ethical awareness across various clinical settings, and examine additional factors influencing ethical sensitivity. This will contribute to developing evidence-based strategies to strengthen ethical practice in nursing.

### **Recommendations**

- Replication of the study in different hospital settings
- Studies with larger sample sizes
- Implementation across various states in India

### **Conclusion**

The study concludes that while most staff nurses possess a moderate level of knowledge regarding ethical sensitivity, there is a clear need for continuous education and training. Strengthening ethical competence among nurses will enhance decision-making abilities and improve the quality of patient care.

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## **A STUDY TO ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING EYE CARE AMONG PATIENTS WITH CONJUNCTIVITIS IN A SELECTED HOSPITAL, PUDUCHERRY**

**D. Manimegalai**

Sri Manakula Vinayagar Nursing College, Puducherry 605107

### **Abstract**

**Background:** Conjunctivitis is a common eye disorder characterized by inflammation of the conjunctiva due to bacterial, viral, or allergic causes. It presents with redness, irritation, discharge, and watering of the eyes and spreads easily through poor hygiene and direct contact. Adequate knowledge and proper practices are essential to prevent transmission and complications.

**Aim:** To assess the knowledge, attitude, and practice regarding eye care among patients with conjunctivitis and to determine their association with selected demographic variables.

**Methods:** A descriptive cross-sectional research design was adopted. The study was conducted among 30 patients with conjunctivitis selected through convenience sampling in a selected hospital at Puducherry. Data were collected using a structured questionnaire consisting of demographic variables, knowledge questionnaire, attitude scale, and practice checklist. Data were analyzed using descriptive and inferential statistics.

**Results:** The findings revealed that 60% of patients had inadequate knowledge, 26.7% had moderate knowledge, and 13.3% had adequate knowledge regarding eye care. All patients (100%) demonstrated a positive attitude. In terms of practice, 50% showed good adherence and 50% had moderate adherence. A significant association was found between knowledge level and variables such as area of residence and past history of conjunctivitis ( $p < 0.05$ ).

**Conclusion:** The study concludes that despite a positive attitude, patients have inadequate knowledge and only moderate practices regarding eye care. Health education interventions are essential to improve awareness, promote proper hygiene, and prevent the spread and complications of conjunctivitis.

**Keywords:** Conjunctivitis, Eye Care, Knowledge, Attitude, Practice, Patients.

### **Introduction**

The eye is one of the most important sensory organs of the human body and plays a vital role in daily activities. Maintaining proper eye care is essential for preserving vision and preventing infections. Among the common eye problems, conjunctivitis is one of the most frequently occurring conditions affecting people of all age groups. It is an inflammation of the conjunctiva that can be caused by bacterial, viral, or allergic factors which are characterized by redness, irritation, discharge, and watering of the eyes. It spreads easily through contact and poor hygiene practices. Lack of knowledge and improper eye care behaviors can increase the risk of

complications and transmission. Therefore, assessing the knowledge, attitude, and practices of patients regarding eye care is essential to promote prevention and effective management.

### Need for the Study

#### Global

- **Viral Conjunctivitis:** Caused by adenoviruses in 65–90% of cases; highly contagious, especially in schools and healthcare settings.
- **Bacterial Conjunctivitis:** Incidence in the U.S. is ~135 per 10,000; accounts for 1% of primary care visits.
- **Allergic Conjunctivitis:** Affects 6–30% globally; often linked to allergic rhinitis. The treatment market is projected to grow from USD 3.2 billion (2024) to USD 4.96 billion (2032).

#### National (India)

- **Bacterial Conjunctivitis:** Incidence ~135 per 10,000, similar to global trends.
- **Allergic Conjunctivitis:** Prevalence is 12.22%, higher in males (13.44%). Most affected age groups: 5–7 years (40.5%) and 8–10 years (31%).

### Objectives of the Study

- To assess the level of knowledge, attitude and practices regarding eye care for patients with conjunctivitis.
- To associate the level of knowledge regarding eye care among conjunctivitis patients with their selected demographic variables and clinical variables.

### Operational Definitions

- **Assess:** Evaluate knowledge, attitude, and practices regarding conjunctivitis eye care.
- **Eye Care:** Cleaning of the eyes using prescribed solutions to prevent infection.
- **Conjunctivitis:** Inflammation of the eye's outer layer and inner eyelid surface.

### Assumptions

Patient will have moderate knowledge, positive attitude and moderate practice regarding eye care for patients with conjunctivitis

### Review of literature

Classification	No. of Reviews (Journals)
SECTION: A - Literature related to conjunctivitis	10
SECTION: B - Literature related to level of knowledge, attitude and practice on eye care for patients with conjunctivitis	08

## Research Methodology

Research Approach	Quantitative research approach.
Research Design	<b>Descriptive research design</b>
Setting	SMVMCH, Puducherry.
Population	All patient with conjunctivitis
Sample	Patient with conjunctivitis who fulfil the inclusion criteria
Sampling technique	<b>Convenient sampling technique</b>
Sample Size	30 patients with conjunctivitis
Inclusion Criteria	Both male and female patient with conjunctivitis. Patient with conjunctivitis in a selected hospital Puducherry. Patients who are willing to participate in the study. Patient who could speak Tamil / English.
Exclusive criteria	Patient who were not willing to participate in this study. Patient with conjunctivitis who had complications.

## Description of Tool

### Section – A: Demographic and Clinical Variables

This section consists of demographic variables such as age, sex, educational status, occupation, religion, siblings, income per month, area of residence & clinical variables such as duration of conjunctivitis, type of conjunctivitis (bacterial / viral / allergic), past history of conjunctivitis, any family history of conjunctivitis, usage of contact lenses or spectacles and currently under drug regimen.

### Section – B:

The knowledge questionnaires consist of 20 items regarding knowledge of patients with conjunctivitis. Each correct response is graded as ‘1’ and wrong response is graded as ‘0’

### Section C:

The Attitude scale consist of 10 items regarding the knowledge of patient with conjunctivitis. Each question has a scale score represents 1=Strongly Disagree, 2=Disagree. 3=Neutral, 4=Agree, 5=Strongly Agree.

### Section D:

The Practice questionnaires consist of 10 items regarding the practice of patient with conjunctivitis. Each correct response is graded as yes = "1" and wrong response is graded as No = "0".

### Data Collection Procedure

After obtaining formal permission, the researcher proceeded with data collection. The researcher used a convenient sampling technique to select 30 patients with conjunctivitis who are admitted and visiting OPD in SMVMCH, Puducherry. Informed consent was obtained from patients who were included in the study. Demographic data was collected. Knowledge, attitude and practice questionnaire were used to assess the knowledge, attitude and practice regarding eye care among patient with conjunctivitis. The investigator assured the study participants that the study information will be kept confidential.

### Analysis and Interpretation of Data

Section A:	Description of demographic & clinical variables of patients.
Section B:	Assessment of the level of knowledge regarding eye care among patients with conjunctivitis.
Section C:	Assessment of the level of attitude regarding eye care among patients with conjunctivitis.
Section D:	Assessment of the level of practice regarding eye care among patients with conjunctivitis.
Section E:	Association of the level of knowledge regarding eye care among patients with conjunctivitis with their demographic variables & clinical variables

#### Section B: Assessment of the level of knowledge regarding eye care among patients with conjunctivitis (N=30)

Scoring Interpretation	
1-7	Inadequate knowledge
8-14	Moderately adequate knowledge
>14	Adequate knowledge

**Results:** The study finding shows that, majority 18 (60%) of them had inadequate knowledge, 8 (26.7%) of them had moderate knowledge and 4 (13.3%) of them had adequate knowledge.

#### Section C: Assessment of the level of attitude regarding eye care among patients with conjunctivitis (N = 30)

Scoring Interpretation	
10-25	Negative attitude
>25	Positive attitude

**Results:** The study finding shows that, majority 30 (100%) of them had positive attitude regarding eye care among patients with conjunctivitis.

**Section D: Assessment of the level of practice regarding eye care among patients with conjunctivitis (N = 30)**

Scoring Interpretation	
1-3	Low adherence
4-6	Moderate adherence
>6	Good adherence

**Results:** The study finding shows that majority 15 (50%) of them had good adherence and 15 (50%) of them had moderate adherence regarding eye care among patients with conjunctivitis.

**Section E: Association of the level of knowledge regarding eye care among patients with conjunctivitis with their demographic variables (N=30)**

S. No	Demographic variables	X <sup>2</sup> value
1	Area of residence	X <sup>2</sup> = 6.375 P=0.041*
2	Past history of conjunctivitis	X <sup>2</sup> = 6.116 P= 0.047*

p<0.05 – Significant; p<0.01 – Highly significant

**Results:** The study shows that there is significance association between area of residence and past history of conjunctivitis with level of knowledge regarding eye care among patients with conjunctivitis where p < 0.05

**Discussion**

**Objective: The first objective was to assess the level of knowledge, attitude and practices regarding eye care for patients with conjunctivitis.**

**Findings:** In aspects of knowledge the present study reveals that, majority 18 (60%) of them had inadequate knowledge, 8 (26.7%) of them had moderate knowledge and 4 (13.3%) of them had adequate knowledge. Regarding attitude the finding shows that, majority 30 (100%) of them had positive attitude regarding eye care among patients with conjunctivitis. In aspect of practice, majority 15 (50%) of them had good adherence and 15 (50%) of them had moderate adherence regarding eye care among patients with conjunctivitis.

**Objective: The second objective was to associate the level of knowledge regarding eye care among conjunctivitis patients with their selected demographic variables.**

**Findings:** The study finding revealed that there is significance association between area of residence and past history of conjunctivitis with level of knowledge regarding eye care among patients with conjunctivitis where p < 0.05 There is no significance association between age, education status, occupation, religion, income per month, family history of conjunctivitis, duration

of conjunctivitis, type of conjunctivitis (bacterial / viral / allergic), usage of contact lenses or spectacles and currently under drug regimen.

### **Implication of the Study**

#### **Nursing Implication:**

The findings of this study can help nurses understand patients' current knowledge, attitudes, and behaviors about conjunctivitis and guide interventions to improve eye care and prevent disease spread.

#### **Nursing Practice:**

Nurses can use study results to develop patient-specific teaching plans focusing on eye hygiene, use of medication, and preventing the spread of conjunctivitis.

#### **Nursing Administration:**

Training programs for nurses can be created or updated based on common knowledge and practice gaps identified in patients.

#### **Nursing Education:**

Enhances nurse's skills in delivering targeted health education related to eye care and hygiene.

#### **Nursing Research:**

Provides a strong basis for future research on the effectiveness of educational interventions for conjunctivitis and other communicable diseases.

#### **Delimitations:**

The study is limited to 30 patients with conjunctivitis.

The study was limited to patient with conjunctivitis in a selected hospital Puducherry.

#### **Recommendations**

- The same study can be conducted with large samples.
- The same study can be conducted in community area among public.

#### **Summary**

A descriptive cross-sectional design was adopted to assess the knowledge, attitude, and practice (KAP) regarding eye care among patients with conjunctivitis in a selected hospital, Puducherry. Data were collected from patients using a structured questionnaire consisting of demographic details and items related to knowledge, attitude, and practice of eye care. The study aimed to identify existing gaps in awareness and behavior, assess patient perceptions towards eye care, and determine the association between KAP levels and selected demographic as well as clinical variables. The collected data were analyzed using appropriate descriptive and inferential statistics to interpret the findings effectively.

## Conclusion

The present study assessed the knowledge, attitude, and practice regarding eye care among patients with Conjunctivitis in a selected hospital, Puducherry. The findings revealed that there was a significant association between area of residence and past history of conjunctivitis with the level of knowledge regarding eye care among patients, where  $p < 0.05$ . The study concludes that improving awareness and education on eye care practices is essential to enhance patient knowledge and promote better preventive and management behaviors related to conjunctivitis.

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# EFFICACY OF NURSING INTERVENTION BASED ON SINBAD SCORE SYSTEM AMONG PATIENTS WITH DIABETIC FOOT ULCER AT SMVMCH, PUDUCHERRY

**S. Manikandan**

Department of Medical Surgical Nursing,  
Sri Manakula Vinayagar Nursing College, Puducherry 605107

## Abstract

**Background:** Diabetes Mellitus is a long-term metabolic condition characterized by elevated blood glucose levels, with Type 2 diabetes being the most common form. One of its serious complications is Diabetic Foot Ulcer (DFU), which can lead to infection, gangrene, and amputation if not properly managed. The SINBAD scoring system is a simple and reliable tool used to assess ulcer severity and guide treatment.

**Aim:** To evaluate the effectiveness of nursing intervention based on the SINBAD scoring system on wound healing among patients with diabetic foot ulcers.

**Methods:** A quantitative approach with a true experimental pre-test and post-test control group design was adopted. The study was conducted among patients with diabetic foot ulcers admitted at SMVMCH, Puducherry. Samples were selected using simple random sampling. The SINBAD scoring system was used to assess ulcer grading, and structured nursing intervention was provided to the experimental group. Data were analyzed using descriptive and inferential statistics.

**Results:** The findings revealed that nursing intervention based on the SINBAD scoring system significantly improved wound healing among patients with diabetic foot ulcers. A significant difference was observed in ulcer grading before and after intervention in the experimental group, as well as between experimental and control groups. A significant association was also found between intervention effectiveness and selected demographic variables.

**Conclusion:** The study concludes that structured nursing interventions guided by the SINBAD scoring system are highly effective in improving wound healing and preventing complications in diabetic foot ulcer patients.

**Keywords:** Diabetic Foot Ulcer, SINBAD Score System, Wound Healing.

## Introduction

Diabetes mellitus is a chronic non-communicable metabolic disorder characterized by high blood glucose levels. Type 2 Diabetes is the most common form, mainly caused by insulin resistance and unhealthy lifestyle habits. The global prevalence of diabetes is increasing rapidly, especially in developing countries. Diabetic patients are prone to complications such as cardiovascular disease,

neuropathy, nephropathy, and retinopathy. Diabetic foot ulcer (DFU) is one of the most serious complications of diabetes. Minor injuries, poor hygiene, improper footwear, and poor metabolic control are major risk factors. Untreated diabetic foot ulcers may lead to infection, gangrene, deformity, and amputation. Early detection through regular foot examination and patient education can prevent complications. The SINBAD scoring system by the International Working Group on the Diabetic Foot (IWGDF) helps in grading and effective management of diabetic foot ulcers.

### **Need for the Study**

Diabetes Mellitus is a major global health problem affecting millions of people worldwide. According to the International Diabetes Federation (2019), approximately 463 million individuals were living with diabetes, and this number is projected to rise to 700 million by 2045. Nearly 50% of cases remain undiagnosed, increasing the risk of complications such as Diabetic Foot Ulcer (DFU). Globally, one limb is lost every 30 seconds due to DFU, and individuals with diabetes have a 25% lifetime risk of developing foot ulcers.

In India, around 77 million people are affected by diabetes, making it one of the countries with the highest burden. It is estimated that nearly 100,000 amputations occur annually, with about 85% preceded by diabetic foot ulcers. Additionally, DFU management accounts for 5–20% of total diabetes-related healthcare costs, contributing to a significant economic burden. At the regional level, studies indicate that the prevalence of diabetes in Puducherry is approximately 5.6%, with nearly 17% of diabetic patients at risk of developing foot ulcers. These statistics highlight the urgent need for early identification, effective management, and preventive strategies to reduce complications.

### **Objectives**

- To grade the diabetic foot ulcer based on the SINBAD score system among diabetic patients in experimental and control groups.
- To evaluate the effectiveness of nursing intervention based on the SINBAD score system among patients with diabetic foot ulcer in the experimental group.
- To compare the grade of diabetic foot ulcer based on the SINBAD score system among diabetic patients in experimental and control groups.
- To associate the effectiveness of nursing intervention based on the SINBAD score system among patients with diabetic foot ulcer with their selected demographic variables in experimental and control groups.

### **Hypothesis**

- **H1:** There is a significant difference in the grade of diabetic foot ulcers based on the SINBAD score system among patients with diabetic foot ulcer before and after nursing intervention in the experimental group.

- **H2:** There is a significant difference in the grade of the wound healing process in diabetic foot ulcer based on the SINBAD score system in experimental and control groups
- **H3:** There is a significant association in the grade of diabetic foot ulcer based on the SINBAD score system among patients with diabetic foot ulcer with their selected demographic variable

#### **Assumptions:**

- Diabetic foot ulcer severity can be reliably graded using the SINBAD score system.
- SINBAD is a valid tool for guiding nursing care.
- Regular nursing interventions improve wound healing outcomes.
- Patients will adhere to treatment and follow-up.
- Standard wound care practices are consistently applied.
- Glycemic control is monitored and influences healing.
- Changes in healing can be measured through SINBAD scores.

#### **Operational Definitions**

- **Assess:** Evaluation of Diabetic Foot Ulcer severity using the SINBAD scoring system after nursing intervention.
- **Efficacy:** Effectiveness of nursing intervention in improving wound healing based on SINBAD score.
- **Nursing Intervention:** Planned care including wound dressing, infrared therapy, foot exercises, repositioning, diabetic diet, and medication as prescribed.
- **Patients:** Individuals diagnosed with Diabetes Mellitus with diabetic foot ulcer admitted at SMVMCH.
- **Diabetic Foot Ulcer:** An open wound in diabetic patients associated with infection, tissue damage, and delayed healing.

#### **Review of literature**

Section A: Studies related to diabetic foot ulcer (6 studies)

Section B: studies related to the SINBAD score system used to grade the diabetic foot ulcer (related studies 4)

Section C: studies related to nursing intervention to prevent diabetic foot ulcer complications (related studies 6)

#### **Methodology**

The study was conducted at Sri Manakula Vinayagar Medical College and Hospital (SMVMCH), a 1050-bedded tertiary care hospital in Puducherry. The population comprised all patients

diagnosed with Diabetes Mellitus with diabetic foot ulcer. The sample included patients admitted to the inpatient department who met the inclusion criteria. A simple random sampling technique was used to select the participants.

**Inclusion criteria** included patients diagnosed with diabetic foot ulcer, both male and female, receiving prescribed medical care, and admitted for a minimum of 7 days.

**Exclusion criteria** included patients with foot ulcers related to autoimmune diseases, malignancy, acute limb ischemia, end-stage renal disease, HIV infection, Hepatitis B or C, those with SINBAD score above 4, and those undergoing alternative treatment methods.

### **Description of the Tool**

**Section A:** Socio-demographic data.

**Section B:** SINBAD score system to grade the diabetic foot ulcer

**Section C:** Nursing intervention checklist for care of diabetic foot ulcer

### **Scoring and Interpretation**

<b>Score</b>	<b>Intepretation</b>
0	less severe ulcer
1	Mild severe ulcer
2	Moderate severe ulcer
>3	More severe ulcer

### **Analysis and Interpretation of Data**

**Section A:** Description of the demographic variables among Diabetic foot ulcer samples.

**Section B:** Grade of Diabetic foot ulcer based on SINBAD score system.

**Section C:** Mean and standard deviation regarding the efficacy of nursing intervention based on the SINBAD score system among patients with diabetic foot ulcer.

**Section D:** Association between the effectiveness of nursing intervention based on SINBAD scoring among patients with diabetic foot ulcer with their selected demographic variable.

### **Discussion**

The study evaluated the effectiveness of nursing interventions guided by the SINBAD score system among patients with Diabetic foot ulcer. The findings showed a significant improvement in wound healing in the experimental group compared to the control group. A reduction in SINBAD scores indicated better ulcer condition in terms of size, depth, infection, and ischemia. This improvement can be attributed to structured nursing care, including regular wound assessment, proper dressing, infection control, and patient education, which collectively enhanced the healing process.

The SINBAD scoring system proved to be a simple and effective tool for assessing ulcer severity and guiding appropriate interventions. It facilitated early identification of high-risk cases and

supported timely clinical decision-making. The study also found that demographic variables influenced healing outcomes, highlighting the importance of individualized care. Overall, consistent monitoring, patient adherence, and SINBAD-based nursing interventions significantly improved wound healing and helped prevent complications among patients.

### **Nursing Implications**

#### **Nursing Practice:**

Use of SINBAD scoring in managing Diabetic Foot Ulcer helps in accurate assessment, improves wound healing, and prevents complications. It can be adopted as routine evidence-based care.

#### **Nursing Education:**

Curriculum should include diabetic wound care, SINBAD scoring, and evidence-based interventions to enhance students' clinical skills.

#### **Nursing Administration:**

Administrators should conduct training programs, workshops, and ensure resources to improve quality care and promote evidence-based practices.

### **Recommendations**

Based on the findings of the present study, the following recommendations have been made.

- A similar study can be conducted in other parts of the country with a large sample. The same study can be conducted in different settings.
- The study can be replicated with larger samples for better generalization.
- The study can be done for Diabetic foot ulcer patients in community area also. The study can be done as a longitudinal study.
- The study can be replicated with bio-physiological parameters. A comparative study can be conducted between pharmacological and non-pharmacological interventions.

### **Summary**

Diabetes mellitus is a chronic metabolic disorder characterized by high blood glucose levels. Type 2 Diabetes is the most common type and is mainly caused by insulin resistance and unhealthy lifestyle. Diabetic patients are prone to serious complications, especially Diabetic Foot Ulcer (DFU).

Early foot examination and the SINBAD scoring system by the International Working Group on the Diabetic Foot help in prevention and effective management

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# **A STUDY TO ASSESS THE DEPRESSION AND ANXIETY AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS AT SRI MANAKULA VINAYAGAR MEDICAL COLLEGE AND HOSPITAL, PUDUCHERRY**

**V. Lilly**

Department of Medical Surgical Nursing,  
Sri Manakula Vinayagar Nursing College, Puducherry 605107

## **Abstract**

**Background:** Chronic Obstructive Pulmonary Disease is a progressive respiratory disorder characterized by persistent airflow limitation and symptoms such as chronic cough, sputum production, and dyspnea. It is a major global health problem contributing to high morbidity and mortality. In addition to physical complications, patients often experience psychological issues such as anxiety disorder and Depression, which adversely affect quality of life and disease outcomes. Early identification and management of these conditions are essential for improving overall patient care.

**Aim:** To assess the level of anxiety and depression among patients with chronic obstructive pulmonary disease.

**Methods:** A quantitative approach with a descriptive research design was adopted. The study was conducted among COPD patients at Sri Manakula Vinayagar Medical College and Hospital. A total of 50 samples were selected using purposive sampling technique. Data were collected using standardized tools, namely the Hamilton Anxiety Rating Scale and Hamilton Depression Rating Scale. Data were analyzed using descriptive and inferential statistics.

**Results:** The findings revealed that among 50 participants, 4 (8%) had no depression, 17 (34%) had mild depression, 12 (24%) had severe depression, and 3 (6%) had very severe depression. The results also showed varying levels of anxiety among patients, indicating a significant psychological burden. A considerable proportion of patients were affected by both anxiety and depression.

**Conclusion:** The study concludes that COPD has a significant psychological impact in addition to physical health effects. Early screening, counseling, and appropriate nursing interventions are essential to manage anxiety and depression. Integrating mental health assessment into routine COPD care can improve quality of life and overall patient outcomes.

**Keywords:** Chronic Obstructive Pulmonary Disease, Anxiety, Depression, Nursing Care, Psychological Impact.

## **Introduction**

Chronic Obstructive Pulmonary Disease (COPD) is a preventable and treatable, slowly progressive respiratory disease characterized by persistent airflow limitation involving the airways and lung parenchyma. It commonly presents with overlapping features of emphysema and chronic bronchitis. Cigarette smoking is the primary cause, while biomass fuel exposure, occupational hazards, childhood infections, asthma, and genetic factors like alpha-1 antitrypsin deficiency also contribute. The main symptoms include chronic cough, excessive sputum production, and progressive dyspnea that worsens over time. COPD significantly interferes with daily activities and increases the risk of respiratory failure. It is a major global health problem and one of the leading causes of death worldwide. Diagnosis is confirmed by pulmonary function tests, chest X-ray, CT scan, and arterial blood gas analysis. Management includes bronchodilators, antibiotics, oxygen therapy, smoking cessation, and preventive care. COPD is associated with several comorbidities such as cardiovascular diseases, metabolic disorders, and osteoporosis. Anxiety and depression are common in COPD patients and greatly affect their quality of life and overall outcomes.

## **Need for the Study**

Global Burden of Disease Study reported 251 million COPD cases worldwide in 2016, with about 3.17 million deaths in 2015 (5% of global deaths). More than 90% of COPD deaths occur in low- and middle-income countries, showing its major global burden. In India, COPD prevalence among adults above 30 years ranges from 1.1% to 10% in different regions. COPD accounts for nearly 500,000 deaths annually in India, which is significantly high compared to many countries. Smoking is a major risk factor, but biomass fuel exposure, tuberculosis, asthma, and occupational hazards also contribute. In Puducherry, COPD prevalence is around 2–7%, especially among biomass fuel users and poorly ventilated households. Regional studies like the BOLD study reported prevalence variations in cities such as Pune, Mumbai, and Srinagar. Research from Sri Manakula Vinayagar Medical College and Hospital showed that TNF-alpha levels increase with COPD severity. COPD patients have a high risk of comorbidities including cardiovascular diseases, anxiety, and depression. Therefore, there is a strong need to study COPD patients to improve early detection, management, and psychological well-being.

## **Statement of the Problem**

A study to assess the depression and anxiety among chronic obstructive pulmonary disease patients at Sri Manakula Vinayagar Medical College and Hospital, Puducherry.

## **Objectives of the Study**

- To assess the level of depression among chronic obstructive pulmonary disease patients.
- To assess the level of anxiety among chronic obstructive pulmonary disease patients.

- To associate the level of anxiety and depression with the selected demographic variables.

### Operational Definitions

- **Assess:** It is to evaluate the level of depression and anxiety among chronic obstructive pulmonary disease patients.
- **Depression:** Depression is a common and serious medical illness causes feelings of sadness and or a loss of interest in activities once enjoyed. It can lead to a variety of emotional and physical problems and can decrease a person's ability to functional at work and at home.
- **Anxiety:** Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. People with anxiety disorder usually have intrusive thoughts or concern. They may avoid certain situation out of worry
- **Chronic Obstructive Pulmonary Disease:** Chronic obstructive pulmonary disease (COPD) is a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The more familiar terms 'chronic obstructive bronchitis and emphysema are no longer used, but are now included within the COPD diagnosis.

### Review of Literature

Classification	Journals	Webmax
<b>Section I:</b> Literature related to chronic obstructive pulmonary disease	3	4
<b>Section II:</b> Literature related to anxiety and depression.	4	3
<b>Section III:</b> Literature review related to impact of anxiety and depression among COPD patients.	3	2

### Research Methodology

The present study adopts a quantitative research approach with a descriptive research design to assess the selected variables among patients. The study is conducted at Sri Manakula Vinayagar Medical College and Hospital, Puducherry. The target population includes all patients diagnosed with chronic obstructive pulmonary disease (COPD). The sample consists of COPD patients receiving treatment at SMVMCH, Puducherry. A total of 50 patients is selected as the sample size using an appropriate sampling technique to ensure adequate representation of the study population.

### Inclusion Criteria:

- Patients who have chronic obstructive pulmonary disease come to hospital.
- Patients who are able to read and write Tamil or English

- Both male and female with chronic COPD.

**Exclusion criteria:**

- The patients not willing to participate in the study.
- The patients who are not present at the time of data collection.

**Description of tool**

**Section I**

Demographic Data which comprises of 13 items seeking information about age, gender, education, occupation, monthly income, socio economic status, religion, marital status, type of family, dietary pattern, duration of illness bad habits, undergone any counselling

**Section II**

Hamilton anxiety assessment questionnaire for chronic obstructive pulmonary disease patients is used to assess the level of anxiety. Which consist of Anxious mood, Tension, Fears, Insomnia, Intellectual, Depressed mood, Somatic (muscular), Somatic (sensory), Cardiovascular symptoms, Respiratory symptoms, Gastrointestinal symptoms, Genitourinary symptoms, Autonomic symptoms, Behavior at interview.

**Section III**

Hamilton depression assessment questionnaire for chronic obstructive pulmonary disease patients is used to assess the level of depression

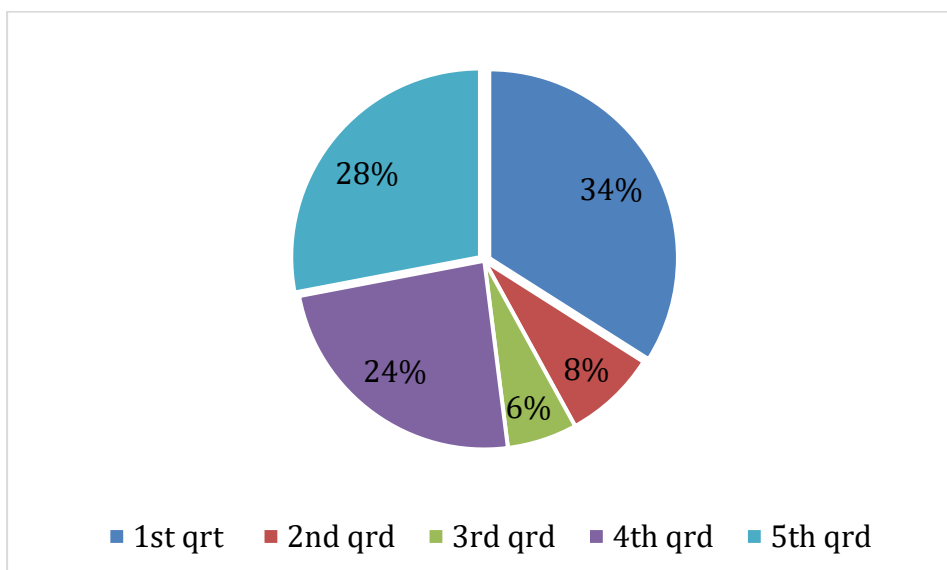
**Anxiety (Hamilton anxiety rating scale)**

Score	Interpretation
<17	Mild Anxiety
18-24	Moderate Anxiety
25-30	Severe Anxiety

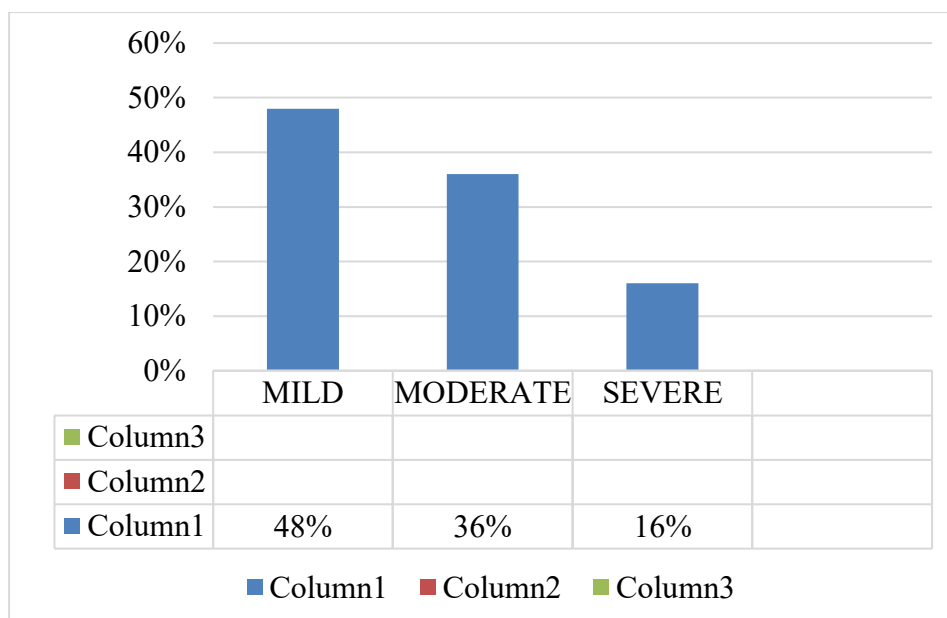
**Depression (Hamilton Depression Rating Scale)**

Score	Interpretation
0-7	No Depression
8-13	Mild Depression
14-18	Moderate Depression
19-22	Severe Depression
>23	Very Severe Depression

### Distribution on level of depression among COPD patient at SMVMCH



### Distribution on level of anxiety among COPD patient at SMVMCH



### Discussion

The first objective of the present study was to assess the level of depression among patients with chronic obstructive pulmonary disease (COPD). Among the 50 samples, 4 (8%) had no depression, 17 (34%) had mild depression, 12 (24%) had severe depression, and 3 (6%) had very severe depression. These findings indicate that a considerable proportion of COPD patients experience varying levels of depression, with mild depression being the most common. The results are supported by a study conducted by Osama M. Gado (2013), who examined anxiety and depression among severe COPD patients. The study included 220 severe COPD patients and 220 non-COPD

controls using the Hospital Anxiety and Depression Scale (HADS). The findings revealed significantly higher levels of anxiety and depression among severe COPD patients, which were also associated with a poorer quality of life.

### **Implications of the Study**

#### **Nursing Practice:**

The nurses working in the hospital and the clinical setting can understand client who is having high risk of getting chronic obstructive pulmonary disease patients so the nurse should know the emotional status and the needs to know about nurse to providing care to those patients.

#### **Nursing Education:**

Nurse educators should teach students about coping skills and adjustment strategies for COPD patients. Workshops and in-service programs should be organized to improve knowledge of patient care and the hospital environment. Students must understand that COPD patients are at high risk for anxiety and depression.

#### **Nursing Research:**

Numbers of studies are being conducted to assess anxiety and depression for the chronic obstructive pulmonary disease patients mainly to reduce depression and anxiety. Nursing studies are comparatively less in this field. A different study has to be conducted further to evaluate the level of depression and anxiety and gives solution to the problems.

#### **Recommendations:**

- A similar study can be recommended by large number of samples in future with various aspects for longer duration.
- The similar study is recommended to large population with interventional based study.
- It is recommended that special area with trained staffs for provision of counselling in clinical settings will improve the health status of the chronic obstructive pulmonary disease patients<sup>50</sup>

### **Summary**

The present study was to assess the depression and anxiety among chronic obstructive pulmonary disease patients at Sri Manakula Vinayagar Medical College and hospital. A descriptive research design was selected for this study with quantitative research approach was adopted for this study. The study samples were selected by using purposive sampling technique at Sri Manakula Vinayagar Medical College and hospital. The data was collected for the period of 3 week after obtained formal permission from the ethical committee of Sri Manakula Vinayagar Nursing College

## Conclusion

The study conducted among the 50 chronic obstructive pulmonary disease patients by using standardized tool to assess the level of depression and anxiety it shows that there was an impact of developing anxiety and depression among chronic obstructive pulmonary disease patients.

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Kalitheerthalkuppam, Madagadipet, Puducherry - 605 107

Website: <https://www.jisuniversity.ac.in/>

Email: [principal@smunc.ac.in](mailto:principal@smunc.ac.in)

Ph: 0413 2643070 Fax: 0413 2641549

