Textbook of

# Nursing Foundations

for GNM Nursing Students

*As per the New Syllabus of Indian Nursing Council for GNM*

## What's New in this Edition?

- A thoroughly updated and revised edition
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- A perfect amalgamation of theoretical and clinical aspects
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3rd Edition

CBS Publishers & Distributors Pvt. Ltd.

Harindarjeet Goyal

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# Nursing Foundations

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**Third Edition**



**Harindarjeet Goyal** PhD, MPhil, MSc (MSN), BSc (Hons.), RN, RM

*Former Principal*

Rajkumari Amrit Kaur College of Nursing
New Delhi

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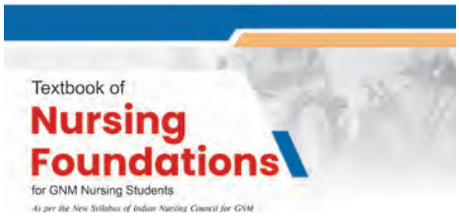


**ISBN: 978-81-977500-8-3**



**Third Edition: 2025**

**Second Edition: 2023**

**First Edition: 2022**



Published by **Satish Kumar Jain** and produced by **Varun Jain** for

**CBS Publishers & Distributors Pvt Ltd**

4819/XI Prahlad Street, 24 Ansari Road, Daryaganj, New Delhi 110 002, India.

Ph: +91-11-23289259, 23266861, 23266867 Website: www.cbspd.com

Fax: 011-23243014

e-mail: delhi@cbspd.com; cbspubs@airtelmail.in.

***Corporate Office:*** 204 FIE, Industrial Area, Patparganj, Delhi 110 092

Ph: +91-11-4934 4934 Fax: 4934 4935

e-mail: feedback@cbspd.com; bhupesharora@cbspd.com

***Branches***

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- **Kolkata:** Hind Ceramics Compound, 1st Floor, 147, Nilganj Road, Belghoria, Kolkata-700056, West Bengal
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- **Lucknow:** Basement, Khushnuma Complex, 7-Meerabai Marg (Behind Jawahar Bhawan), Lucknow-226001, Uttar Pradesh
  Ph: +0522-4000032 e-mail: tiwari.lucknow@cbspd.com
- **Mumbai:** PWD Shed, Gala No. 25/26, Ramchandra Bhatt Marg, Next to J.J. Hospital Gate No. 2, Opp. Union Bank of India, Noor Baug, Mumbai-400009, Maharashtra
  Ph: +91-22-66661880/89 Fax: +91-22-24902342 e-mail: mumbai@cbspd.com

***Representatives***

- **Hyderabad** +91-9885175004
- **Jharkhand** +91-9811541605
- **Nagpur** +91-9421945513
- **Patna** +91-9334159340
- **Pune** +91-9623451994
- **Uttarakhand** +91-9716462459

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## Extends its Tribute to

# Florence Nightingale

*For glorifying the role of women as nurses,*
*For holding the title of " The Lady with the Lamp,"*
*For working tirelessly for humanity–*
*Florence Nightingale will always be*
*remembered for her*
*selfless and memorable services to the*
*human race.*

**Florence Nightingale**
**(May 1820 – August 1910)**

# About the Author

**Harindarjeet Goyal** *[PhD, MPhil, MSc (MSN), BSc (Hons.), RN, RM]*, is a former Principal, Rajkumari Amrit Kaur College of Nursing, New Delhi. She held numerous positions, viz. Clinical Instructor, Tutor, Assistant Professor, Associate Professor, Professor-cum-Vice Principal and Officiating Principal, during her illustrious career spanning over 44 years.

She received her BSc (Hons.) degree in the year 1975 from Rajkumari Amrit Kaur College of Nursing affiliated to University of Delhi. Thereafter, she taught Nursing Foundations and Medical Surgical Nursing to undergraduate students. She pursued her MSc (N) from the same college and continued as faculty member.

Her interest and experience in nursing education resulted in her obtaining MPhil and PhD degrees in Nursing from Delhi University in 2008. She was offered WHO Fellowship on Critical Care Nursing for three months at Baltimore, University of Maryland Medical System, USA in the year 1994. In the year 2004, she was offered another WHO Fellowship on ART for AIDS at Thailand in Bangkok for four-week duration.

The author has written many learning modules for Distance Education Learning Program for Post Basic BSc nursing students. She has also actively participated in curriculum revision of Baccalaureate and Master of Nursing programs. Besides, she has presented many papers at national and international levels on the topics related to nursing education. She is a member of nursing associations, such as TNAI, NRSI, etc. The author is also involved in guiding PhD students enrolled under INC consortium affiliated to Rajiv Gandhi University of Health Sciences, Bengaluru, Karnataka.

# Preface to the Third Edition

Nursing is a profession grounded in both compassion and precision, demanding a unique blend of theoretical knowledge and practical expertise. As the healthcare environment grows increasingly complex, the need for well-prepared nurses who can deliver high-quality care has never been greater. It is with this understanding that I present the new edition of the *Textbook of Nursing Foundations*, designed to be an essential resource for educators, mentors, and students alike.

This textbook has been meticulously organized to align with the latest Indian Nursing Council (INC) syllabus for GNM Nursing. It is structured to meet the learning requirements necessary for preparing nurses at both the graduate and postgraduate levels. The goal is to provide a comprehensive foundation for patient care, equipping nursing students with the skills and confidence needed to excel in their profession.

An integral part of nursing education involves the seamless integration of theoretical knowledge and practical skills. This book addresses both aspects extensively, ensuring that students not only understand the concepts but can also apply them effectively in clinical settings. The content is systematically framed and logically sequenced to enhance the learning experience, enabling students to develop the dexterity required for competent nursing practice.

The text is presented in a concise, clear, and straightforward manner, using simple terminologies that make complex ideas accessible. Each nursing skill and procedure is outlined in a tabular format, following the standard nursing process approach—Assessment, Planning, Implementation, and Evaluation—complete with rationales and documentation guidelines. This structured approach ensures that students can master each step with confidence and clarity.

In this edition, new sections have been introduced, covering First Aid, Community Firs Aid, Diagnostic Techniques, and Rehabilitation in greater detail. These additions represent a significant enhancement, providing students with a broader understanding of essential aspects of nursing care that were not as comprehensively addressed in previous editions.

Each chapter follows a consistent format, beginning with an introduction to the topic, followed by detailed procedures and their rationales. This systematic approach not only aids in understanding but also reinforces the practical application of knowledge, making this textbook an indispensable tool for nursing education.

I am confident that this edition will serve as a valuable resource for both budding and practicing nurses, helping them build their competence and confidence. It is my hope that readers will find this book as engaging and enlightening as I did while writing it. Your feedback is always welcome as we continue to strive for excellence in nursing education.

**Harindarjeet Goyal**

# Preface to the First Edition

Keeping in mind the challenges that today's nurses confront with, it becomes imperative to provide them with necessary skills of compassionate nursing care in a variety of healthcare settings, which they could apply for patients in the various stages of illness. At the same time, there are ample opportunities for health promotion activities for individuals and groups; this is an integral part of providing nursing care.

It gives me immense pleasure and satisfaction to introduce and present new edition of **Textbook of Nursing Foundations**. The book is specifically designed for the nursing education in Asia to prepare nurses to think critically and practice collaboratively within today's challenging and complex healthcare delivery system.

Healthcare is an exciting and challenging field with opportunities and advancements. The entire healthcare system reverberates with change. The role of nurses in this system is expanding and extending, hence the process of embracing change inevitably requires adaptation and a constant demand for literary excellence. This textbook has been developed comprehensively with an incredible outlook to help nurses develop their clinical skills which are the fundamental aspect of nursing care.

The book is organized into **15 Units having 64 chapters**. The content has been designed for the GNM Nursing students and is based on prescribed curriculum and requirements, which is conforming to Indian Nursing Council.

Training is an integral part of the nursing profession. A nurse must possess a strong theoretical base and practical skills. This book will act as a standard prescription for educators and mentors to teach and demonstrate the clinical nursing procedures to budding and practicing nurses. The text has been developed keeping in mind the clinical requirements of a student nurse at all levels of nursing education.

I hope you will enjoy reading the book as much as I enjoyed writing it. Constructive criticism from the readers is always welcome to improve upon in further edition. Happy Reading!

**Harindarjeet Goyal**

# Acknowledgments

Writing a book of this standard demands lots of patience, and focus. I am fortunate enough to have support of many people who helped me in this endeavor.

I want to thank them all who trusted and supported me with their encouragement throughout.

- Fundamentals of Nursing department consisting of Mrs Madhumita Dey, Mrs Usha Phulara, Mrs Rekha Kotnala and Mrs Monika Sharma. They contributed towards many procedures which were carried out in the lab.
- My husband, Mr Ramesh Goyal who had been my source of inspiration to handle the project from beginning till end.
- My daughters: Charu, Khyati and Khushboo for support and patience throughout.

I would like to thank **Mr Satish Kumar Jain** (Chairman) and **Mr Varun Jain** (Managing Director), M/s CBS Publishers and Distributors Pvt Ltd for providing me the platform in bringing out the book. I have no words to describe the role, efforts, inputs and initiatives undertaken by **Mr Bhupesh Aarora** [Sr. Vice President – Publishing and Marketing (Health Sciences Division)] for helping and motivating me.

I sincerely thank the entire CBS team for bringing out the book with utmost care and attractive presentation. I would like to thank Ms Nitasha Arora (Assistant General Manager Publishing – Medical and Nursing), Ms Daljeet Kaur (Assistant Publishing Manager) and Dr Anju Dhir (Sr. Product Manager and Medical Development Editor) for their publishing support. I would also extend my thanks to Mr Shivendu Bhushan Pandey (Sr. Manager and Team Lead), Ms Surbhi Gupta (Sr. English Editor), Mr Ashutosh Pathak (Sr. Proofreader cum Team Coordinator) and all the production team members for devoting laborious hours in designing and typesetting the book.

# Reviewers

**A Tamil Selvi**
Medical Surgical Nursing
PhD (N), MSc (N), RM, RN
*Principal*
Amity College of Nursing, Amity University
Gurugram, Haryana

**Abha Verma**
Community Health Nursing
MSc (N)
College of Nursing
Sanjay Gandhi Postgraduate Institute of
Medical Sciences (SGPGIMS)
Lucknow, Uttar Pradesh

**Amandeep Kaur,** RN, RM
Medical Surgical Nursing
MSc (N) Neurosciences
*Assistant Professor cum Simulation Lab*
*Training Officer*
National Reference Simulation Center
SGT University
Gurugram, Haryana

**Anil Kumar Mandalia**
Medical Surgical Nursing
MSc (N)
*Principal*
Government College of Nursing
Bhavnagar, Gujarat

**Anurag Singh**
Child Health Nursing
MSc (N)
*Associate Professor*
Popular College of Nursing
Varanasi, Uttar Pradesh

**Arshid Nazir Shah**
Pediatric Nursing
PhD (PG), Diploma in Nursing
Administration (DNA)
*Assistant Professor*
Government Nursing College, GMC
Baramula, Jammu, J&K

**Banita Rana**
Obstetrics and Gynecological Nursing
MSc (N)
*Nursing Tutor*
Shri Mata Vaishno Devi College of Nursing
Katra, Jammu and Kashmir

**Bina Barla**
Community Health Nursing
MSc (N)
*Principal*
School of Nursing
Regional Institute of Medical Sciences (RIMS)
Ranchi, Jharkhand

**Blessymol Joseph**
Child Health Nursing
MSc (N)
*Professor*
SH College of Nursing
Greengardens, Cherthala, Kerala

**Christal Jeba Sheela Ahimas**
Medical Surgical Nursing
MSc (N)
*Principal*
Indira Gandhi College of Nursing
Gandhi Nagar, Kadavanthra, Kochi

**Daisy Thomas**
Medical Surgical Nursing
PhD (N), MSc (N), RM, RN
*Acting Vice-Principal*
Raj Kumari Amrit Kaur College of Nursing
University of Delhi
New Delhi

**Dayalal D Patidar**
Community Health Nursing
PhD (N), MSc (N)
*Principal and Ex. Dean of Faculty of Medicine of HNGU*
Joitiba College of Nursing
Visnagar, Mehsana, Gujarat

**Gaurav Tyagi**
Community Health Nursing
MSc (N)
*Vice Principal*
KMC College of Nursing
Meerut, Uttar Pradesh

**Iqbal Majid Dar**
Psychiatric Nursing
MSc (N)
*Tutor*
Government College of Nursing (MA Road)
Srinagar, J&K

*The names of the reviewers are arranged in an alphabetical order.*

**Jamal Fatima Hashmi**
Mental Health & Psychiatric Nursing
MSc (N)
*Assistant Professor*
Rufaida College of Nursing
Jamia Hamdard, New Delhi

**Jaunita John Barren**
Child Health Nursing
MSc (N)
*HOD*
Metro College of Nursing
Greater Noida, Uttar Pradesh

**J C Frank**
Community Health Nursing
MSc (N)
*Professor cum Principal*
BEE ENN College of Nursing
Jammu, J&K

**Joy Gamadia**
Medical Surgical Nursing
PhD (Scholar), MSc (N), BSc (N)
*Professor cum Principal*
Narnarayan Shastri Institute of Nursing
Jetalpur, Ahmedabad, Gujarat

**Kiran Batra**
Medical Surgical Nursing
PhD (Public Administration)
MSc (N), MA (Public Administration), BSc (N)
*Principal*
Mata Sahib Kaur College of Nursing
Mohali, Punjab

**Latha Damodaran**
Obstetrics and Gynecological Nursing
MSc (N)
*Principal*
SIMET College of Nursing, Nooranad
Alappuzha, Kerala

**M Annakamatchi**
Obstetrics and Gynecological Nursing
MSc (N)
*Professor cum Vice Principal*
AR College of Nursing
Tenkasi, Tamil Nadu

**Mallika Faruk Vhora**
Medical Surgical Nursing
PhD (N) Scholar, MSc (N)
*Principal*
Tirupati School of Nursing
Sharda Mandir School Campus, Salatwada
Vadodara, Gujarat

**Manohari Sivakumar**
Medical Surgical Nursing
MSc (N)
*Principal*
Saraswathi College of Nursing
Hapur, Uttar Pradesh

**Mohd. Suhail Jogi**
Psychiatric & Mental Health Nursing
MSc (N)
*Nursing Officer*
SKIMS (MMINSR)
Srinagar, J&K

**Mukesh Tetarwal**
Medical Surgical Nursing
MSc (N)
*Principal*
Government Nursing College
Jodhpur, Rajasthan

**N Baba Subramanyam**
Psychiatric Nursing
PhD (N), MSc (N), M Phil (N)
*Principal*
Ambika Group of Colleges
Mohali, Punjab

**Narinder Kaur Walia**
Medical Surgical Nursing
PhD (N), MSc (N)
*Associate Professor*
All India Institute of Medical Sciences
Bhatinda, Punjab

**Naveena JH**
Community Health Nursing
PhD (N), MSc (N)
*Vice Principal cum Professor*
Government College of Nursing,
GSVM Medical College Campus,
Kanpur, Uttar Pradesh

**Neeraj Kumar Bansal**
Medical Surgical Nursing
PhD (N), MSc (N)
*Vice Principal*
Government College of Nursing,
BRD Medical College
Gorakhpur, Uttar Pradesh

**Nobal Sharma**
Medical Surgical Nursing
MSc (N)
*Chairperson*
Naina College of Nursing
Mandi, Himachal Pradesh



*The names of the reviewers are arranged in an alphabetical order.*

**Poonam Sharma**
Maternal Health Nursing
MSc (N)
*Principal*
Gautam College of Nursing
Hamirpur, Himachal Pradesh

**Prakash Bishnoi**
Medical Surgical Nursing
MSc (N)
*Nursing Superintendent*
Subdivision Railway Hospital
Abu Road, Rajasthan

**Prathiba Manoharam B**
Child Health Nursing
PhD (N), MSc (N)
*Principal*
Keshlata College of Nursing
Bareilly, Uttar Pradesh

**Prema Balusamy**
Community Health Nursing
PhD (N), MSc (N)
*Assistant Professor*
Department of Nursing
College of Applied Medical Sciences
University of Hafr-Al-Batin
Kingdom of Saudi Arabia

**Princey Mandal**
Mental Health Nursing
MSc (N)
*Professor cum Principal*
Patna Institute of Nursing and Paramedical Science
Patna, Bihar

**Priyesh M Bhanwara**
Community Health Nursing
PhD (N), MSc (N)
*Principal*
Kamdar College of Nursing
Rajkot, Gujarat
*Vice President*
Nursing Scholar Society of India

**Radhey Shyam Sahu**
Medical Surgical Nursing
PhD Scholar (N), MSc (N) MA (Sociology), PGDCA
MD in Alternative Medicine
*Principal*
M R Bharti School of Nursing
Mundka, Delhi

**Rajesh Kumar Sharma**
Medical Surgical Nursing
PhD (N), MSc (N)
*Professor & Head*
Department of Critical Care Nursing
Himalayan College of Nursing
Swami Rama Himalayan University
Dehradun, Uttarakhand

**Ranu Bag**
Medical Surgical Nursing
MSc (N)
*Principal*
Gouri Devi Nursing Academy
Durgapur, West Bengal

**Ravindra HN**
PhD (N), MPhil, MSc (N), BAMS (AM), MA (Sociology)
*Principal*
Parul Institute of Nursing
Parul University
Waghodia, Vadodara, Gujarat

**Rehana**
Community Health Nursing
MSc (N)
*Tutor*
Government College of Nursing
(Shreen Bagh)
Srinagar, J&K

**Rekha Anil Kumar**
Mental Health Nursing
PhD (N), MSc (N)
Certified Mindfulness Coach
*Vice President TNAI (Training Nursing Association of India), Delhi*
Faculty and CNE Coordinator
College of Nursing
Dr Ram Manohar Lohia Hospital
New Delhi

**Rekha Kotnala**
Medical Surgical Nursing
PhD (N), MSc (N)
*Faculty*
RAK College of Nursing
Lajpat Nagar, New Delhi

**Rohi Jan**
Community Health Nursing
MSc (N)
*Nursing Tutor*
Alamdar Memorial College of Nursing & Medical Technology, Chrar-i-Sharif
Srinagar, Jammu and Kashmir

*The names of the reviewers are arranged in an alphabetical order.*

**Roohi Jan**
Community Health Nursing
MSc (N)
*Nursing Tutor*
Syed Mantaqui Memorial College of Nursing and Medical Technology
IUST Awantipora, Jammu and Kashmir

**Shama Lohumi**
Community Health Nursing
PhD (Psychology), MSc (N),
MA (English Literature)
*Principal*
Shivalik Institute of Nursing
Shimla, Himachal Pradesh

**Shany Vincent**
Medical Surgical Nursing
MSc (N)
*Associate Professor & HOD of Nursing Foundations*
KVM College of Nursing
Cherthala, Kerala

**Shazia**
Obstetrics and Gynecological Nursing
MSc (N)
*Assistant Professor*
Bibi Halima College of Nursing & Medical Technology
Srinagar, J&K

**Sheeshpal Chauhan**
Psychiatric Nursing
MSc (N)
*Principal*
Florence College of Nursing
Faridabad, Haryana

**Shipra Sachan**
Obstetrics and Gynecological Nursing
MSc (N)
*Assistant Professor*
Rama College of Nursing
Rama University
Kanpur, Uttar Pradesh

**Siva Jeya Anand T**
Medical Surgical Nursing
PhD (N), MSc (N), MA (Sociology, Public Administration)
*Vice Principal*
Chitra College of Nursing
M C Road, Pandalam
Pathanamthitta, Kerala

**Sripriya Gopalkrishnan**
Medical Surgical Nursing
PhD (N), MSc (N), RM, RN, PGDM (HR)
*Principal*
Sadhu Vaswani College of Nursing
Pune, Maharashtra

**Sunita Lawrence**
Obstetrics and Gynecological Nursing
PhD (N), MSc (N)
(Received National Florence Nightingale Award–2019)
*Principal*
Pragyan College of Nursing
Bhopal, Madhya Pradesh

**Syed Shahid Siraj**
Psychiatric & Mental Health Nursing
MSc (N)
*Nursing Tutor*
Alamdar Memorial College of Nursing & Medical Technology
Chrar-i-Sharif, Srinagar, J&K

**Virendra Jain**
Medical Surgical Nursing
PhD (N), MSc (N)
*Principal*
Dinsha Patel College of Nursing
College Road, Nadiad
Nadiad, Gujarat

**Vishranti B Giri**
Obstetrics and Gynecological Nursing
MSc (N)
*Nursing Tutor*
College of Nursing, Government Medical College and Hospital
Aurangabad, Maharashtra

**VR Sridevi**
Community Health Nursing
MSc (N)
*Professor*
Chitra College of Nursing
M C Road, Pandalam
Pathanamthitta, Kerala

**Yogeshwar Puri Goswami**
Mental Health Nursing
PhD (N), MSc (N)
*Principal*
Geetanjali College of Nursing
Udaipur, Rajasthan



*The names of the reviewers are arranged in an alphabetical order.*

# From the Publisher's Desk

*Dear Reader,*

Nursing Education has a rich history, often characterized by traditional teaching techniques that have evolved over time. Primarily, teaching took place within classroom settings. Lectures, textbooks, and clinical rotations were the core teaching tools; and students majorly relied on textbooks by local or foreign publishers for quality education. However, today, technology has completely transformed the field of nursing education, making it an integral part of the curriculum. It has evolved to include a range of technological tools that enhance the learning experience and better prepare students for clinical practice.

As publishers, we've been contributing to the field of Medical Science, Nursing and Allied Sciences and earned the trust of many. By supporting **Indian authors**, coupled with **nursing webinars and conferences**, we have paved an easier path for aspiring nurses, empowering them to excel in national and state level exams. With this, we're not only enhancing the quality of patient care but also enabling future nurses to adapt to new challenges and innovations in the rapidly evolving world of healthcare. Following the ideology of **Bringing learning to people instead of people going for learning**, so far, we've been doing our part by:

- Developing quality content by qualified and well-versed authors
- Building a strong community of faculty and students
- Introducing a smart approach with Digital/Hybrid Books, and
- Offering simulation Nursing Procedures, etc.

Innovative teaching methodologies, such as modern-age Phygital Books, have sparked the interest of the Next-Gen students in pursuing advanced education. The enhancement of educational standards through **Omnipresent Knowledge Sharing Platforms** has further facilitated learning, bridging the gap between doctors and nurses.

At Nursing Next Live, a sister concern of CBS Publishers & Distributors, we have long recognized the immense potential within the nursing field. Our journey in innovating nursing education has allowed us to make substantial and meaningful contributions. With the vision of strengthening learning at every stage, we have introduced several plans that cater to the specific needs of the students, including but not limited to **Plan UG** for undergraduates, **Plan MSc** for postgraduate aspirants, **Plan FDP** for upskilling faculties, **SDL** for integrated learning and **Plan NP** for bridging the gap between theoretical & practical learning. Additionally, we have successfully completed seven series of our **Target High** Book in a very short period, setting a milestone in the education industry. We have been able to achieve all this just with the sole vision of laying the foundation of diversified knowledge for all. With the rise of a new generation of educated, tech-savvy individuals, we anticipate even more remarkable advancements in the coming years.

We take immense pride in our achievements and eagerly look forward to the future, brimming with new opportunities for innovation, growth and collaborations with experienced minds such as yourself who can contribute to our mission as Authors, Reviewers and/or Faculties. Together, let's foster a generation of nurses who are confident, competent, and prepared to succeed in a technology-driven healthcare system.

**Mr Bhupesh Aarora**
(Sr Vice President – Publishing & Marketing)
bhupeshaarora@cbspd.com| +91 95553 53330

# Special Features of the Book

**LEARNING OBJECTIVES**

*After the completion of the chapter, the readers will be able to:*

- Identify factors influencing environment.
- Explain the importance of maintaining proper environment.
- Describe the nurses' role in promoting safety.
- Identify various hazardous materials in the environment.
- Correctly use protective devices for patients.

**Learning Objectives** given in the beginning of each chapter enable the student to know what he/she will learn after reading.

Every chapter begins with a **Chapter Outline** to provide a glimpse of the content discussed.

**CHAPTER OUTLINE**

- Introduction
- Factors Affecting the Environment
- Reduction of Physical Hazards
- Factors Affecting Safety
- Safety Guidelines in Nursing Unit
- Strategic Objectives for Implementing Patient Safety

**KEY TERMS**

**Agent:** Is the first link in the chain of disease transmission, it can be Biological agent, Nutritional agent, Chemical agent, Physical agent or Social agent.

**Biomedical concept:** Traditionally health has been viewed as "absence of disease". If any person is free from disease, he/she is considered healthy. This concept is known as biomedical concept and is based on Germ theory of disease.

**Key Terms** used in the chapter are presented to familiarize the readers with the important terminologies.

**Remember Boxes** include the vital nursing facts which are extremely valuable for practicing nurses.

**Remember**

- The nursing diagnosis must be developed from the data, never the other way round.
- Do not try to fit a client to a nursing diagnosis, rather select the appropriate diagnosis from the data cues presented by the client.

**TABLE 27.1:** Characteristics of normal and abnormal urine

| Characteristic | Normal | Abnormal |
|---|---|---|
| Amount in 24 hours (adult) | 1,200–1,500 mL | <1,200 mL or above 1500 |
| Color, clarity | Straw amber, transparent | Dark amber, cloudy, dark orange, red or dark brown, mucous plugs, viscid, thick |
| Sterility | No microorganisms present | Microorganisms present |
| pH | 4.5–8 | Over 8 or under 4.5 |

Numerous **Tables** are used to clarify the concepts and make the reading enjoyable and informative.

Informative **Boxes** have been supplemented throughout the book to facilitate extra knowledge.

**Box 44.1**

**Using an incentive spirometer**

- Hold and place spirometer in an upright position
- Exhale normally
- Seal the lips tightly around the mouthpiece
- Take in a slow, deep breath to elevate the balls and then hold the breath for 2 seconds initially, increasing to 6 seconds, to keep the balls elevated.

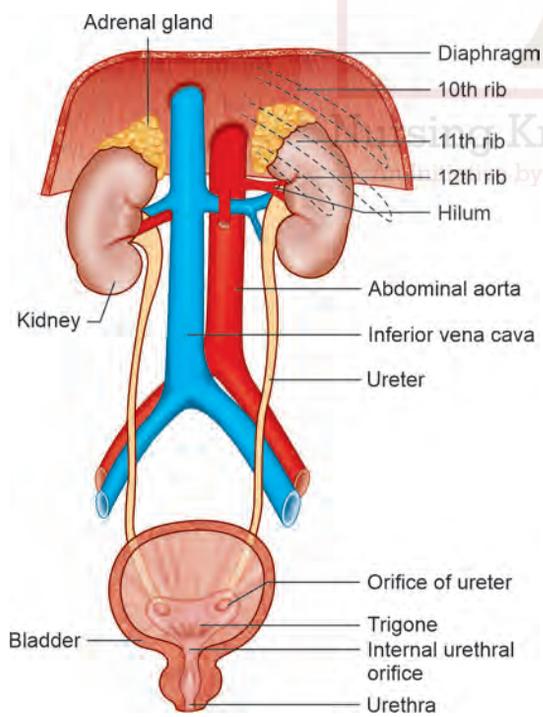


**Fig. 27.1:** Anatomic structures of urinary tract

Studded with 200+ fully colored **Images and Illustrations** for easy grasp of the relevant topic.

**SKILL:** HEATING LAMP APPLICATION

**Articles Required**

| Articles | Rationale |
|---|---|
| A lamp with required voltage | To apply heat |
| Measuring tape | To check proper distance of the lamp and the body |
| Screen | To maintain privacy |
| Vaseline | To prevent skin burning |
| An extra bedsheet | To drape the patient |

**Skill procedures** supplemented with theory for better understanding of their implementation in clinical settings.

Each and every chapter ends with **Summarized one-liner** for quick revision of the chapter.

**SUMMARY**

- Application of heat is commonly used in the hospital and home as therapeutic measure. It causes vasodilatation and increase of blood flow to the affected area.
- The use of Hot Application is contraindicated in Malignancy, Edema associated with venous and lymphatic disease, cutaneous injuries and patients with paralysis.

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- Sr. Nancy. "Stephanie's Principles and Practice of Nursing senior Nursing Procedure and Nursing Administration", vol. 2, 4th edition. NR Brothers; 2005. pp. 461-82.


At the end of every chapter, **Bibliography** has been added for further reference to enhance knowledge.



Detailed **Student Assignment** in the form of exercises in each and every chapter will facilitate structured learning and revision of the material provided in the respective chapters.

## STUDENT ASSIGNMENT

### LONG ANSWER QUESTIONS

1. Discuss the effects of cold application.

### SHORT ANSWER QUESTIONS

1. Write the purposes of cold application.
2. Give examples of local and general cold application.

### MULTIPLE CHOICE QUESTIONS

1. **Cold applications are contraindicated in:**
   a. Patient in shock or collapse
   b. Malignancy
   c. Diabetes
   d. Both a and c

# Syllabus

## NURSING FOUNDATIONS

**Time: 210 hours**

**Placement: First Year** **Fundamentals of Nursing: 190 hours**

**Course description:** This course is designed to help students develop an ability to meet the basic health need of the patients with regard to nursing care and develop skill in the competencies required for rendering effective patient care.

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| I | • Define nursing and explain its nature, meaning, scope, ethics and principles in nursing.<br>• Identify the qualities of a professional nurse health care agencies and its functions.<br>• Describe the holistic approach to nursing and the determinants of health and the effects of illness. | **Introduction to Nursing**<br>• Nursing—concept, meaning, definitions, scope and functions<br>• History of nursing in India<br>• Nursing as a profession<br>• Nursing professional—qualities and preparation<br>• Ethics in nursing—roles and responsibilities of a nurse<br>• Health care agencies—hospital and community service—types and function of hospitals health team.<br>• Modern approaches to nursing care including holistic nursing care<br>• Health and disease:<br>▪ Definition of health, determinants of health status.<br>▪ Basic human needs<br>▪ Illness and its effects on individual | 25 | Lecture cum discussions | • Short answer<br>• Objective type<br>• Essay type |
| II | • Describe nursing care of the patient/client in hospital using nursing process.<br>• Demonstrate skill in the admission and discharge process, maintenance of safe environment and records and reports. | **Nursing Care of the Patient**<br>• Patient environment in the hospital: Patients unit<br>• Therapeutic environment:<br>▪ Physical factors—lighting temperature, ventilation, humidity, noise, pestilence.<br>▪ Safety needs prevention of environmental hazard<br>▪ Psychosocial and aesthetic factors.<br>• Patient's adjustment to the hospital:<br>▪ Understanding the patient as a person socioeconomic and cultural background, health status, etc.<br>▪ Effect of hospitalization on patient and family.<br>▪ Admission, transfer, discharge procedures | 6 | • Lecture cum discussions<br>• Demonstration of maintaining the records and reports<br>• Role play | • Short answer<br>• Objective type<br>• Essay type<br>• Return demonstration |

*Contd...*

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| | | • Basic nursing skills:<br>▪ Communication<br>▪ Nursing interview<br>▪ Recording and reporting<br>• Nursing process:<br>▪ Meaning and importance<br>▪ Assessment, planning, implementation and evaluation<br>▪ Nursing care plan | | | |
| **III** | • Describe basic needs of the patient<br>• Demonstrate skill in meeting basic care of the patient | **Meeting the Basic Needs of a Patient**<br>• Physical needs:<br>▪ Comfort, rest, sleep and exercise—importance and its promotion<br>▪ Body mechanics—moving, lifting, transferring<br>▪ Position and posture maintenance<br>▪ comfort devices<br>▪ Beds and bed making—principles of bed making, types and care of bed linen<br>▪ Safety devices, restraints and splints<br>▪ Exercises—active and passive<br>• Hygienic needs:<br>▪ Personal and environmental hygiene<br>▪ Nurses role in maintaining personal and environmental hygiene<br>▪ Care of eyes, nose, ears, hands and feet<br>▪ Care of mouth, skin, hair and genitalia<br>▪ Care of pressure areas, bed sores<br>• Elimination needs:<br>▪ Health and sickness<br>▪ Problems—constipation and diarrhea, retention and incontinence of urine<br>▪ Nurse's role in meeting elimination needs<br>▪ Offering bedpan and urinal<br>▪ Observing and recording abnormalities<br>▪ Preparation and giving of laxative, suppositories, enemas, bowel wash, flatus tube<br>▪ Perineal care, care of patient with urinary catheter, diapers<br>▪ Maintenance of intake and output record<br>• Nutritional needs:<br>▪ Diet in health and disease<br>▪ Factors affecting nutrition in illness<br>▪ Nurse's role in meeting patient's nutritional needs<br>▪ Modification of diet in illness<br>▪ Diet planning and serving<br>▪ Feeding helpless patients including artificial methods of feeding | 65 | • Lecture cum discussion<br>• Demonstration | • Short answer<br>• Objective type<br>• Essay type<br>• Return demonstration<br>• Assessment using checklist |

*Contd...*

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| | | • Psychological and spiritual needs:<br>▪ Importance<br>▪ Nurse's role—diversional and recreational therapy<br>• Care of terminally ill and dying patient:<br>▪ Dying patient's signs and symptoms of approaching death, needs of dying patient and family<br>▪ Nursing care of dying—special considerations; advance directives, euthanasia, will, dying declaration, organ donation, etc.<br>▪ Medico legal issues<br>▪ Care of the dead body<br>▪ Care of unit<br>▪ Autopsy<br>▪ Embalming | | | |
| **IV** | Describe the principles of assessment demonstrate skills in assessing the patient | **Assessment of Patient/Client**<br>• Physical assessment:<br>▪ Importance, principles, methods of assessment<br>▪ Height, weight, posture<br>▪ Head to toe examination<br>• Physiological assessment:<br>▪ Vital signs, normal, abnormal characteristics, factors influencing the variations<br>▪ Observation and collection of specimens—urine, stool, vomitus and sputum<br>• Psychological assessment:<br>▪ Mood, intelligence, emotions normal and abnormal behavior | 14 | • Lecture cum discussions<br>• Demonstration | • Short answer<br>• Objective type<br>• Essay type<br>• Return demonstration<br>• Assessment using checklist |
| **V** | • Describe the infection control, methods in the clinical setting.<br>• Demonstrate infection control practices. | **Infection Control**<br>• Infection control:<br>▪ Nature of infection<br>▪ Chain of infection transmission<br>▪ Defence against infection: Natural and acquired<br>▪ Hospital acquired infection (nosocomial infection)<br>• Concept of asepsis:<br>▪ Medical and surgical asepsis<br>▪ Isolation precautions, barrier nursing<br>▪ **Hand washing:** Simple, hand asepsis, surgical asepsis (scrub)<br>▪ Isolation—source and protection<br>▪ Personal protective equipments—types, uses and techniques of wearing and removing<br>▪ Decontamination of unit and equipment<br>▪ Transportation of infected patient<br>▪ Standard safety precaution<br>▪ Transmission-based precautions | 20 | • Lecture cum discussion<br>• Demonstration<br>• Explain using manual of biomedical waste management of Government of India<br>• Demonstration<br>• Videos<br>• Simulation exercises | • Short answers<br>• Essay type<br>• Objective type |

*Contd...*

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| | | • Biomedical waste management:<br>▪ Importance<br>▪ Types of hospital wastes<br>▪ Hazards associated with hospital waste<br>▪ Decontamination of hospital waste<br>▪ Segregation and transportation<br>▪ Disposal | | | |
| **VI** | Describe therapeutic nursing care | **Therapeutic Nursing Care**<br>• Care of patients with respiratory problems/dyspnea<br>▪ Deep breathing and coughing exercises<br>▪ $O_2$ inhalation<br>▪ Dry and moist inhalation<br>▪ Oronasal suctioning<br>• Care of patient with altered body temperature—Hot and cold applications<br>• Care of patients with fluid and electrolyte imbalance<br>• Care of unconscious patient<br>• Care of the bedridden patient (traction, fractures, etc.)<br>• Care of patient with pain<br>• Care of patients with body elimination deviation | 30 | • Lecture cum discussions<br>• Demonstration | • Short answer<br>• Objective type<br>• Essay type<br>• Return demonstration<br>• Assessment using checklist |
| **VII** | Explain the principles, routes, effects of administration of medications | **Introduction to Clinical Pharmacology**<br>Administration of medication:<br>• General principles/considerations:<br>▪ Purposes of medication<br>▪ Principles: Rights, special considerations, prescriptions, safety in administering medications and medication errors<br>▪ Drugs forms<br>▪ Routes of administration<br>▪ Storage and maintenance of drugs and nurses responsibility<br>▪ Broad classification of drugs<br>▪ Therapeutic effect, side effect, toxic effect, allergic reaction, drug tolerance, drug interactions<br>▪ Factors influencing drug actions<br>▪ Systems of drug measurement: metric system, household measurements<br>▪ Converting measurements units: Conversion within one system, between systems, dosage calculations<br>▪ Terminologies and abbreviations used in prescription of medications | 30 | • Lecture cum discussions<br>• Demonstration | • Short answer<br>• Objective type<br>• Essay type<br>• Return demonstration<br>• Assessment using checklist |

*Contd...*

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| | | • Oral drug administration: Oral, sublingual, buccal : equipment and procedure<br>• Parentral:<br>▪ General principles<br>▪ Types of parentral therapies<br>▪ Types of syringes, needles, canulas and infusion sets<br>▪ Protection from needle stick injuries, giving medications with a safety syringe<br>▪ Routes of parentral therapies: Purposes, site equipment, procedure and special considerations in giving intradermal, subcutaneous, intramuscular and intravenous medications.<br>▪ Advanced techniques: Epidural, intrathecal, intraosseous, intraperitoneal, intrapleural, intra-arterial<br>▪ Role of nurse<br>• Topical administration: Purposes, site, equipment, procedure, special considerations for applications to skin and mucous membrane.<br>• Direct application:<br>▪ Gargle, throat swab<br>▪ Insertion of drug into body cavities: Nasal pack, suppositories/ medicated packing into rectum/ vagina<br>▪ Instillations: Ear, eye, nasal, bladder and rectal.<br>▪ Irrigations: Eye, ear, bladder, vaginal and rectal.<br>▪ Spray: Nose and throat<br>• Inhalations: Nasal, oral, endotracheal, tracheal (steam, oxygen and medications)—purposes, types, equipment, procedure and special considerations<br>• Recording and reporting of medications administered | | | |

# FIRST AID

**Time: 20 hours**

**Course description:** This course is designed to help students develop and understanding of community emergencies and be able to render first aid services as and when need arises.

**General objectives:** Upon completion of this course, the students shall be able to:
1. Describe the rules of first aid.
2. Demonstrate skills in rendering first aid in case of emergencies.

| Unit | Learning Objectives | Content | Hours | Method of Teaching | Assessment Methods |
|---|---|---|---|---|---|
| I | Describe the importance and principle of first aid | **Introduction**<br>• Definition, Aims and Importance of first aid<br>• Rules/General principles of First Aid<br>• Concept of emergency | 2 | Lecture cum discussions | • Short answer<br>• Objective type |
| II | Demonstrate skill in first aid techniques | **Procedures and Techniques in First Aid**<br>• Preparation of First Aid kit.<br>• Dressing, bandaging and splinting(spiral, reverse spiral, figure of 8 spica, shoulder, hip, ankle, thumb, finger, stump, single and double eye, single and double ear, breast, jaw, capelin), triangle bandages uses, abdominal binder and bandage, breast binder, T and many tail bandage, knots reef, clove.<br>• Transportation of the injured<br>• CPR: Mouth to mouth, Sylvester, Schafer, External cardiac massage | 8 | • Lecture<br>• Discussions<br>• Demonstration<br>• Videos simulation exercises | • Short answer<br>• Objective type<br>• Return demonstration |
| III | Describe first aid in common emergencies | **First Aid in Emergencies**<br>• Asphyxia, drowning, shock<br>• Wounds and Bleeding<br>• Injuries to the Bones, Joints and Muscle-fractures, sprains, strains, hanging, falls<br>• Burns and scalds<br>• Poisoning – ingestion, inhalation, bites and stings<br>• Foreign body in eye, ear nose and throat. | 6 | • Lecture cum discussions<br>• Videos Demonstration | • Short answer<br>• Objective type<br>• Return demonstration |
| IV | List various community emergencies and community resources. | **Community Emergencies and Community Resources**<br>• Fire, explosion, floods, earth-quakes, famines etc.<br>• Role of nurses in disaster management<br>• Rehabilitation<br>• Community Resources<br>  ▪ Police, Ambulance services<br>  ▪ Voluntary agencies—local, state national and international | 4 | • Lecture cum discussions<br>• Videos mock drill<br>• Simulation exercise<br>• Videos field visit to voluntary agencies | • Short answer<br>• Objective type<br>• Essay type |

# Contents

## UNIT III MEETING BASIC NEEDS OF A PATIENT



## UNIT IV PHYSICAL ASSESSMENT



## UNIT V PHYSIOLOGICAL ASSESSMENT





## UNIT VI INFECTION CONTROL AND WASTE MANAGEMENT



## UNIT VII THERAPEUTIC NURSING CARE

## UNIT VIII INTRODUCTION TO CLINICAL PHARMACOLOGY



## UNIT IX FIRST AID

# Unit III

# Meeting Basic Needs of a Patient



**UNIT OUTLINE**

# 22

# Providing Comfort

## LEARNING OBJECTIVES

*After the completion of the chapter, the readers will be able to:*

- List comfort devices used for patients.
- Describe the types of beds used for patients.
- Demonstrate skill in different types of bed making.

## CHAPTER OUTLINE

- Introduction
- Comfort Devices
- Beds and Bed Making



## KEY TERMS

**Air cushion:** These are made of rubber and can be inflated with air. They are used to take the weight of the body off the sacral region.

**Back rest:** It is a mechanical device, which provides support to the patient in a sitting position.

**Bed cradle:** It is a comfort device, designed to keep the top bed-clothes off the feet, legs and abdomen of a patient.

**Comfort devices:** These are the mechanical devices planned to provide optimal comfort to an individual.

**Comfort:** The absence of irritating stimuli that distracts attention from the task at hand.

**Foot board:** It is a flat panel made of wood or plastic and is placed at the foot end of the bed.

## INTRODUCTION

Nursing care meets all client needs. The client's most important basic need is comfort which can be provided by using various comfort devices, positions and a comfortable bed.

## COMFORT DEVICES

### Mattresses

Most beds have firm and even surface for patients' comfort. A rubber or plastic surface permits easy cleaning. Special mattresses provide extra comfort and support for clients and relieve the pressure on bony prominences, e.g., air-water mattress.

### Cardiac Table

Cardiac table is a device designed as an overbed table and is placed in front of the patients while they are in Fowler's position. It is so called because normally this is used for cardiac patients, who can lean forward on a pillow. This can also be used for writing purpose, serving food and other self-care activities.

### Back Rest

Back rest is a mechanical device, which provides support to the patient in a sitting position. Pillows can be placed on the back rest according to the comfort of the patient.

### Foot Board

Foot board is a flat panel made of wood or plastic and is placed at the foot end of the bed. It provides support to the patient's feet, keeps the top bed covers off the patient's feet and make the foot comfortable. It helps in preventing foot drop.

### Foot Blocks

Foot blocks are made up of wood, or metal and are used to raise the foot-end or head-end of the bed. They are used to prevent shock, to arrest hemorrhage, to retain enema and after spinal anesthesia.

### Air Cushion

Air cushion are made of rubber and can be inflated with air. They are used to take the weight of the body off the sacral region. They prevent bed sores at the buttocks and should be always used with cover.

### Cotton Rings

Cotton rings are made of cotton. They are used to relieve pressure on certain parts of the body like elbows, heels, occiput, etc.

### Hot Water Bottles

Hot water bottles are rubber bags, which can be filled with hot water, and are used to provide warmth and to make the patient and environment comfortable.

### Bed Cradle

Bed cradle is a comfort device, designed to keep the top bed-clothes off the feet, legs and abdomen of a patient. It is used in cases of burns, or to apply heat for drying plaster casts. It is also used in observing patients with lower limb amputation.

### Rubber Ring

Rubber ring are inflated with air and placed under the patient. Make sure that valve does not come in contact with any part of the body.

### Sand Bags

Sand bags are used to immobilize a part of the body

## BEDS AND BED MAKING

The bed is the equipment used most by a patient, therefore, it should be designed for comfort, safety and adaptability for changing positions.

The typical hospital bed consists of a firm mattress on a metal frame that can be raised and lowered horizontally. The frame is divided into three sections so that the operator can raise and lower the head and foot end of the bed. Most beds are powered by electric motors, but some beds are operated manually. Hospital beds come in two different lengths. Standard length is approximately six feet. Longer bed is available for taller patients. Each bed sits on four rollers or casters that allow the nurse to move the bed easily. A hospital bed is usually 65–70 cm (26–28 inches) above the floor. The greater height of a hospital bed prevents undue musculoskeletal strain on the nurse and the client. The position of a bed is usually changed by electric controls on the side of the bed, at the foot of the bed or on a bedside table. Patients can thus, raise or lower sections of the bed without expending much energy. It is important for nurses to instruct clients on the proper use of controls and to caution them against raising the bed to a position that might cause harm.

Beds contain a number of safety measures. Locks located on the wheels, casters at the center of the bed frame should be used whenever the bed is stationery to prevent accidental movement during the performance of a procedure. Side-rails, located on both sides of a bed, protect patients from accidental falls, helps patients position themselves and provide upper

extremity support as patient gets out of bed. Side rails are adjustable metal frames that raise and lower the bed by pushing or pulling a knob.

## General Rules to be Observed in Bed Making

- Have all equipment on hand and arrange conveniently in the order of use
- Wash hands before and after the procedure
- Do not expose the patient unnecessarily
- Protect the patient from draught of air
- Do not cover the patient's face while placing the linen
- Do not mix clean linen with soiled linen
- Never place the woolen blanket directly on the patient's body and never allow the mackintosh to touch the patient
- Fold dirty linen away from your uniform and body
- Avoid placing dirty linen on the floor
- Start work from head to foot, near to far, and from clean to unclean area.
- Make the bed smooth, unwrinkled and firm
- Avoid using torn linen
- Periodical airing and sunning of mattresses to be done
- Maintain body mechanics
- Keep reasonable distance from the face of the patient to prevent cross-infection.

## Types of Beds

- Open bed (Fig. 22.1)
- Closed bed (Fig. 22.2)
- Occupied bed (Fig. 22.3)
- Admission bed (Fig. 22.4)
- Postoperative bed (Fig. 22.5)
- Cardiac bed (Fig. 22.6)
- Amputation/divided bed (Figs 22.7A and B)
- Fracture bed
- Therapeutic bed, e.g., renal bed, rheumatism bed, etc.


**Fig. 22.1:** Open bed


**Fig. 22.2:** Closed bed


**Fig. 22.3:** Occupied bed


**Fig. 22.4:** Admission bed

Fig. 22.5: Postoperative bed

Fig. 22.6: Cardiac bed



Figs 22.7A and B: Amputation/divided bed

## Open Bed

Open bed is a bed, when it is about to be occupied by either a new patient or an ambulatory patient.

### SKILL: MAKING AN OPEN BED (UNOCCUPIED BED)

- Most beds are made when they are unoccupied.
- Many patients may be out of bed at that time to reduce the work for both the nurse and the patient.

### Purposes

- To provide a comfortable bed for the patient.
- To make the bed, as neat and attractive as possible.

### Supplies

Bottom sheet, top sheet, bed spread/blanket, rubber drawsheet (waterproof), drawsheet, pillow cases, linen bag or hamper.

## Steps of Procedures

**Review and carry out the standard steps as given in Appendix**

| Steps | Rationale |
|---|---|
| **Assessment** | |
| 1. Check patient's ability to be out of bed; obtain help if necessary. | Promotes safety for the patient |
| **Planning** | |
| 2. Arrange the linens in the order in which they will be used. | Saves time if linens are in correct order for use |
| 3. Lower the side rail on your side of the bed. Raise bed to an appropriate working height for you. | Provides easy access to materials. Prevents back strain and injury. |
| **Implementation** | |
| 4. Wash hands and put on clean gloves if there is a chance of contact with blood or body fluids while removing used linen. | Prevents spread of microorganisms |
| 5. Loosen all linen on your side of the bed. Go to other side, lower that rail, and loosen the linens from the head to the foot of the bed. Fold bedspread if not soiled, place over the back of patient's chair. Remove sheets and pillow cases. Place pillows on a clean surface. Roll linens together and put them into linen bag or hamper. Avoid shaking or fanning the linen. | Permits linens to be removed. Bed spread and pillows are ready to be replaced. Placing soiled linen in linen bag prevents spread of microorganisms. |
| 6. Check the mattress; clean if soiled. Move mattress to the head of bed if needed. | Mattress cleaned before making the bed. Mattresses tend to move to the foot of bed when the head of the bed is raised. |
| 7. Make the bed on one side at a time. Place all center folds in the linens at the center of the bed. | Decreases the number of steps for the nurse |
| 8. Place the bottom sheet on the mattress. Unfold the right side and tuck about 12 inches of the sheet smoothly over the top of the mattress. | Puts the same amount of sheet on both sides of bed. Secures sheet snugly to head of bed. |
| 9. Miter the corner at the head of the bed by picking up the side edge of the sheet so that it forms a triangle with the head of bed with the side edge perpendicular to the bed. Using the palm of your hand, hold the sheet against the side of the mattress and tuck excess under mattress. Drop the sheet over your hand; then withdraw your hand and tuck the flap of the sheet under the mattress. | Holds the corners in place |
| 10. Position the draw sheet or lift sheet over the middle of the bed. Unfold and tuck both sheets in, on this side, from head to foot. If a lift sheet is used do not tuck it under mattress. | Protects the bottom linens from soiling by placing the draw sheet from the patient's shoulders to below the hips. |
| 11. Place top edge of the sheet at the top of the mattress, seam side up, and unfold it toward the foot of the bed. | Avoids irritation from the seam |
| 12. Position the blanket or spread 4 inches from the top of the mattress, and unfold it toward the foot. | Allows sheet to be cuffed over top covers |
| 13. Tuck the sheet, blankets, and spread under the bottom of the mattress as one unit. Miter the corner by lifting the top linens out from the mattress and up onto the bed about 18 inches from the bottom of the bed. A triangle should be formed. Tuck excess linens hanging below mattress level under it, bring down the upper portion of the linens, and smooth them into a neat diagonal line. | Secures the linen under mattress. Top covers are not tucked down the sides of the mattress to allow the patient to get in and out of bed easily. |
| 14. Fan fold the top linen back toward the center of the bed while tucking in the bottom sheet and drawsheet. | Allows you to see any wrinkles and remedy them. Holds sheet in place. |
| 15. Grasp the edges of the bottom sheet tightly in both hands with the knuckles on top. Pull tightly down over the side; tuck under the mattress working down the side from head to foot. Pull the sheet diagonally at the bottom corner of the mattress to remove wrinkles. | Provides a smooth bottom sheet without wrinkles that may cause pressure areas. |

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| Steps | Rationale |
|---|---|
| 16. Grasp drawsheet if used. Pull tightly and tuck it in over the side of the mattress. If this is used as a lift sheet, do not tuck it under mattress. | Saves time because a lift sheet is used often |
| 17. Smooth top linens from the head to the foot of the bed. Fold excess sheet, blanket, and spread under the mattress of the foot of the bed. If a toe pleat is not needed, miter the corner of the top linens at one unit. | Provides patient with a wrinkle-free bed |
| 18. Make the pleats. At the center of the top-linens, at the foot of the bed, make a 6 inch lengthwise pleat in the sheet before tucking the covers under the mattress | Allow room for the patient's feet to move and prevents formation of pressure ulcers from the weight of the linens on the toes. |
| 19. Move to the head of bed and fold back the top sheet, forming, a cuff 4–6 inches over the edge of the blanket and spread. | Provides a smooth edge under patient's chin and prevents soiling of blanket and spread. |
| 20. Grasp the closed end of the pillow case, and with the other hand, gather one side of the open pillow case up over the hand at the closed end. Grasp the pillow with the covered hand while holding it away from your body. With the other hand on an open edge, pull the open edges down over the pillow. Do this until the pillow is completely covered. Adjust the pillow inside the case, keeping it from being contaminated by your uniform. | Provides a method for placing a pillow smoothly in the case without contaminating it. |
| 21. Place the pillows at the head of the bed with the open ends away from the door | Provides a neater appearance |
| 22. Place the bed in the lowest position, lock the brakes of the bed. Remove the soiled linen. Follow agency policy, or open the bed by folding the top back. | Promotes safety in getting in and out of bed. Allows patient to enter bed easily. |
| **Evaluation** | |
| 23. Assess the patient's area. Is the bed neat, smooth, and wrinkle-free? Is everything within easy reach of patient? | Promotes safety |
| **Documentation** | |
| 24. Document linen change if required by agency policy. | Records the procedure |

### Closed Bed

Closed bed is an unoccupied bed made to receive the patient and is fully covered with bed spread to protect it from dust and dirt. On admission of the patient, the closed bed is converted into an open bed.

#### *Purposes*

- To keep the bed ready for occupancy
- To provide a neat and tidy appearance to the unit.

### Articles

Same as for open bed

### Occupied Bed

A bed is occupied when it is currently being used by a patient or is reserved for a patient.

## SKILL: MAKING AN OCCUPIED BED

Linens are changed with the patient in bed if bed rest has been ordered.

### Supplies

One bath blanket, rest same as unoccupied bed.

### Purposes

- To provide a clean and comfortable bed for patient.
- To provide for the neat appearance of the ward.

## Steps of Procedures

**Review and carry out the standard steps as given in Appendix**

| Action/steps | Rationale |
|---|---|
| **Assessment** | |
| 1. Check patient's orders to ensure patient is not allowed out of bed. Obtain help if necessary. | Promotes safety and assures medical plan to be followed. |
| **Planning** | |
| 2. Arrange the linens in the order in which they will be used. | Saves time and energy |
| 3. Make sure the bed is locked and lower the side rail on your side. The other side rail should be raised. Raise the bed to an appropriate height. | Prevents back strain and injury |
| **Implementation** | |
| 4. Wash hands and put on clean gloves if there is a chance to come in contact with blood or body fluids during procedure. | Prevents spread of microorganisms |
| 5. Loosen the blanket and spread from the foot of the bed and remove each piece separately. If unsoiled, fold and place them over the back of patient's chair. Place any soiled linen in the hamper bag. | Saves time by readying linens to be replaced |
| **Action** | |
| 6. Place a bath blanket over the patient and the top sheet, unfold it, and ask the patient to hold the top, or tuck under the patient's shoulders. Remove the top sheet from beneath the bath blanket, and place in linen hamper or bag. | Provides warmth and privacy |
| 7. Move the patient into a side lying position at the far side of the bed, facing away from you. Assist the patient into proper alignment. Place a pillow under the head and at the patient's back to keep the patient in place, if needed. | Provides safety, allow near side of bed to be made |
| 8. Loosen the bottom linens from the top and side of the bed; roll each piece of linen as close to the patient as possible.<br>▪ Put the bottom sheet on the bed with the center fold at the center of the mattress. Fanfold the sheet that is for the other side of the bed with the center fold at the center of the mattress.<br>▪ Push the folded linen under the rolled, soiled bottom sheets that are being removed. Tuck the near side of the bottom sheet under the mattress and miter the corner. Tuck the sheet under the mattress from the head to the foot of the bed. | Allows soiled linens to be removed and clean linens to be placed when the patient rolls to the other side of the bed. |
| **Action** | |
| 9. Place the drawsheet on the bed, centering it on the mattress, so that it reaches from the patient's shoulders to below the hips. Fan fold the far side of the sheet, and push it under the rolled bottom sheets. Tuck the near side under the mattress. Raise the side rail. | Allows removal of a soiled drawsheet when the patient is turned. |
| 10. Go to the other side of the bed, lower the rail, and move the patient to the far side of the bed. If the patient can turn easily, ask the patient to roll to the opposite side. Adjust the patient's alignment, and reposition the bath blanket. Ask the patient to grab the raised side rail for support. | Allows removal of soiled linens and placement of clean linens. Raised rail provides safety. |
| 11. Loosen the bottom linens and roll them up. Place in the linen hamper bag. | Prevents spread of microorganisms |
| 12. Pull the bottom sheet across the mattress, fold over the top of the mattress and smooth, tighten and tuck the excess sheet under the mattress, and miter the corner. | Prevents wrinkles that may cause pressure ulcers |
| 13. Pull the drawsheet from the center of the bed, to pull tightly. Place your knee against the mattress while pulling. Tighten, smooth and tuck sheets under the side of the mattress from head to foot. | Protects the bottom sheet from soiling |

*Contd...*

| Action/steps | Rationale |
|---|---|
| 14. Allow the patients to roll onto back. Place the top sheet over the patient with the top edge folded down a few inches beneath the chin. Have the patients hold the top sheet and remove the bath blanket. Position the blanket if used and spread in the same manner. Smooth the top linens and tuck the excess at the foot under the bottom of the mattress. Miter the corner on the near side, then far side, fold the top edge of the sheet over the blanket, and spread to form a cuff. | Keeps the patient warm and protects privacy while the top linens are placed. |
| 15. Make a toe pleat in the top sheet and blanket as given in previous skill | Provides extra room for the feet |
| 16. Remove the used pillow case and place it in the linen hamper or bag. Apply the clean pillow case and place beneath the patient's head with the open ends away from the door. | Provides a neat appearance |
| 17. Lower the bed, replace call light and restore the unit. Remove the linen hamper and place at appropriate area. | Provides safety for the patient and prevents spread of microorganisms. |
| **Evaluation** | |
| 18. Assess the patient's area. Are the linens neat, smooth and wrinkle free? Is the unit restored? | Promotes safety because the patient does not have to reach for items. |
| **Documentation** | |
| 19. Document linen change on the notes, depending on the agency's policy. | Documents the completion of the procedure |

## Admission Bed

Admission bed is the bed which is prepared to receive a newly admitted patient.

### *Steps of Admission Bed*

A long mackintosh and a bath blanket are put over the open bed, until a thorough bath is given to patient at the time of admission. After the bath, the mackintosh and bath blankets are removed.

### *Purposes*

- To welcome the patient
- To provide immediate care, safety and comfort,
- To protect the bed linen while giving bath on admission.

### *Articles*

A long mackintosh and a bath blanket and articles for bed bath.

## Postoperative Bed

Postoperative bed is a bed prepared for a patient who is recovering from the effects of anesthesia following surgery.

### *Purposes*

- To receive the patient after operation
- To provide warmth and comfort
- To prevent shock
- To prevent injury
- To prevent soiling of bed
- To meet any emergency

### *Articles*

Same as open bed with additional articles like.

- Small mackintosh and towel to protect head end of bed
- Temperature tray
- Blood pressure (BP) apparatus to record vital signs
- Intravenous (IV) stand and IV tray: To administer IV fluid to patient
- Hot water bottles 2–3: To keep bed warm
- Oxygen cylinder with tubing and catheter: to meet any emergency
- Suction apparatus: To remove secretions
- **Bed block:** To raise foot end
- **A tray containing:**
  - **Gauze pieces:** To clean mouth off secretion.
  - **Artery forceps:** To prevent falling back of tongue.
  - **Tongue depressor:** To keep the air passage clear.
  - **Airway:** To keep airway open.
  - **Kidney tray and paper bag:** To discard the waste.

### *Procedure*

- Foundation of the bed is the same as that of on open bed
- An extra mackintosh and a towel is placed at head end
- The foot end of the top linen is left untucked and folded back
- Fan fold the top linen lengthwise covering two-thirds of the bed on the right side
- Place the hot water bottles under the top linen
- Place the pillow upright of the head end to protect the patient from injury by hitting against the bars.

## Cardiac Bed

Cardiac bed is a bed prepared for patients with cardiac diseases.

### Purpose

To prepare the bed for the cardiac patient to relieve dyspnea.

### Articles

Same as open bed with additional articles back rest/Fowler's bed—to support the patient while sitting:

- **Cardiac table:** To provide support and comfort.
- **Extra pillows:** To provide support and comfort.
- **Air cushion:** To relieve pressure from sacral area.
- **Knee pillow:** To provide support and comfort.
- **Foot rest:** To prevent slipping down.

### Procedure

- Make the bed as in the open bed
- Place the back rest and arrange pillows
- Place the air cushion and knee pillow
- Adjust the cardiac table and keep the pillows as needed for the patient to lean on it
- Support the feet on foot rest
- Make the patient comfortable

## Amputation/Divided/Cradle Bed

Amputation bed is a bed in which top linen is divided into two parts to visualize the amputated part of the lower limbs without disturbing the patient.

### Purposes

- To watch the stump for hemorrhage and apply tourniquet instantly.
- To keep the weight of bed clothes off the patient.
- To keep the stump in position.

### Articles

Same as any open bed with additional articles extra set of top linen—to make a divided bed:

- **Bed cradle:** To take weight of top clothes off the patient.
- **Two sand bags:** To keep stump in position.
- **Tourniquet and dressing tray:** To control hemorrhage.
- **Pillow with water proof cover:** To elevate the stump and protect pillow.
- **Hot water bottles:** To keep the bed warm.

### Procedure

The foundation and head end of bed is made as in open bed.

- The foot end side of top linen is folded back toward the head end at the level of part/stump to be observed.
- Spread the second set of top linen starting from the level of the stump.
- The second set of top linen should overlap the first by 8–12.
- Receive the patient and elevate the stump on a small pillow and place the sand bags on either side to support the stump.
- Place the bed cradle in position.
- Cover the patient.

## Fracture Bed

Fracture bed is a bed which is prepared for patients with fracture, bone diseases and deformity.

### Purposes

- To prevent undue sagging of mattress.
- To immobilize the fractured part.
- To restrict sudden jerky movements.
- To keep the traction in position.

### Articles

Same as an open bed with additional articles. Fracture board to provide firm support to the patient.

### Procedure

Arrange the fracture board on the cot. The bed is made as an open bed.

## Therapeutic Beds: Renal/Rheumatism Bed

Therapeutic bed is a bed made for patients suffering from rheumatism or renal diseases.

### Purposes

- To carry the weight of the bed clothes off the painful joints.
- To keep the patient warm.
- To induce sweating.

### Articles

Same as in open bed with additional articles:

- **Narrow mackintosh and drawsheet:** To protect the bed linen.
- **Two woolen blankets or bath blankets:** To keep under and over the patient to induce sweating.
- **Bed cradle:** To keep the weight of linen off the patient.
- **Sand bags:** To immobilize the painful joint.
- **Hot water bottles if required:** To provide warmth.

**Note:** In a renal bed, the cradle and sand bags are not required.

### *Procedure*

Bed is made as in open bed. Place a narrow mackintosh and a draw sheet under the patient's buttocks. Place the extra blankets, one over and one under the patient, keeping in mind the principles of body mechanics.

## SUMMARY

- Most basic need is comfort which can be provided by comfort devices and comfortable positions.
- Comfort devices are Mattresses, Cardiac Table, Back Rest, Foot Board, Foot Blocks, Air Cushion, Cotton Rings, Hot Water Bottles, Bed Cradle, Rubber Ring, Sand Bags, etc.
- There are two stages of sleep: Non-rapid eye movement (NREM) sleep and Rapid eye movement (REM) sleep.
- The recommended amount of sleep for adults is 7–9 hours.
- There are different types of beds such as Open bed, Closed bed, Occupied bed, Admission bed, Postoperative bed, Cardiac bed, Amputation/divided bed, Fracture bed, etc.

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# STUDENT ASSIGNMENT

## LONG ANSWER QUESTIONS

1. Discuss the steps followed while making an open bed.
2. Explain about comfort devices, its purposes and uses in detail.
3. Discuss postoperative bed, its uses and steps of procedure to formulate it.

## SHORT ANSWER QUESTIONS

1. List the comfort devices used for patients.
2. Write the purposes of comfort devices.
3. What general rule is to be followed while bed-making?
4. Write about the types of beds briefly.
5. What are the articles needed for cardiac bed?

## MULTIPLE CHOICE QUESTIONS

**1. Comfort device to take the weight of the body off the sacral region is called:**
   a. Cardiac table
   b. Air cushion
   c. Foot block
   d. Foot board

**2. While bed-making, pillow must be placed in such a way that open end of pillow case is:**
   a. Toward the door
   b. Away from the door
   c. Can be placed in both ways
   d. It does not matter

**3. The main purpose of getting amputation/divided bed ready is:**
   a. To provide warmth and comfort
   b. To prevent shock
   c. To keep weight of bed clothes off the patient
   d. To prevent injury

**4. Which of the following describes comfort?**
   a. To soothe
   b. To console
   c. To ease
   d. All of these

**5. Comfort device used to prevent foot drop is:**
   a. Foot board
   b. Foot block
   c. Air cushion
   d. Back rest



***ANSWER KEY***

**1.** b **2.** b **3.** c **4.** d **5.** a

# 36

# General Health Assessment

## LEARNING OBJECTIVES

*After the completion of the chapter, the readers will be able to:*

- Describe the preparation of patient and the environment for doing health assessment.
- Identify the equipment and positions used during a physical assessment.
- Use techniques of inspection, palpation, percussion, and auscultation appropriately during physical assessment.

## CHAPTER OUTLINE

- Introduction
- Physical Health Assessment
- Methods of Examination
- General Survey



## KEY TERMS

**Adventitious breath sounds:** These sounds are not normally heard in lungs but, if present, they may be auscultated.

**Auscultation:** It is the process of listening to sounds produced within the body using stethoscope.

**Bronchial sounds:** These sounds are heard over the trachea and are harsh sounds, high-pitched, with expiration being longer than inspiration.

**Bronchovesicular sounds:** These are heard over the main stem bronchus and are moderate "blowing" sounds, with inspiration equal to expiration.

**Bruits:** A bruit is an audible vascular sound associated with turbulent blood flow.

**Cyanosis:** Cyanosis is bluish color in the skin, lips, and nail beds caused by a shortage of oxygen in the blood.

**Ecchymosis:** A small bruise caused by blood leaking from broken blood vessels into the tissues of the skin or mucous membranes.

**Erythema:** It is redness of the skin or mucous membranes, caused by hyperemia in superficial capillaries.

**Pallor:** Pallor means to look pale. It is a condition in which skin and mucous membranes turn pale.

**Vesicular breath sounds:** These are soft, low-pitched sounds heard best over the base of the lungs and lung periphery during inspiration, which is longer than expiration.

## INTRODUCTION

Health assessment is an integral component of nursing care and is the foundation of the nursing process. The information from the nursing health assessment is used to formulate nursing diagnosis. Assessments are used to plan, implement and evaluate care to promote an optimal level of health through interventions to prevent illness, restore health and facilitate coping with disabilities or death. The information is also used to identify health problems that require interdisciplinary care or immediate referral to other healthcare providers.

**Health assessment has two aspects:**

1. The nursing health history (discussed in chapter on Nursing Process).
2. The physical examination which can be of three types:
   (i) Complete assessment when patient is admitted to healthcare agency.
   (ii) Examination of body systems.
   (iii) Examination of body area.

## PHYSICAL HEALTH ASSESSMENT

A physical health assessment is the systematic collection of objective information. It is usually conducted in a head to toe sequence or a system sequence but can be adapted to meet the needs of the patient. It is often necessary to modify the sequence, positions, and specific assessment based on the patient's age, energy level, cognitive and physical state, as well as time constraints. Even when modified, the physical assessment should be conducted in an organized manner.

### Purposes of Physical Examination

- To obtain baseline data about the client's functional abilities.
- To supplement, confirm or refute data obtained in the nursing history.
- To obtain data that will help establish nursing diagnosis and plans of care.
- To evaluate the physiologic outcomes of healthcare and thus the progress of a client's health problems.
- To make clinical judgments about a client's health status
- To identify areas for health promotion and disease prevention.

### Role of Nurse in Physical Examination

#### *Preparation of the Client*

Clients need to be explained about physical examination. The nurse should reassure the client as to where the examination will take place, why it is important, and what will happen. Instruct the client that all information gathered and documented during the assessment is kept confidential and only those healthcare providers, who have a legitimate need to know the client's information, will have an access to it. Health examinations are generally painless; however, it is important to determine in advance about any positions that are contraindicated for a particular client. The nurse assists the client as needed to undress and put on a gown. Clients should empty their bladder before examination. This will help them feel more relaxed and facilitate palpation of the abdomen and pubic area and if urine analysis is required, urine can be collected for that purpose.

#### *Preparation of the Environment*

It is necessary to prepare the environment before starting the assessment. The time for the physical assessment should be convenient to both the client and the nurse. The environment needs to be well lit and the equipment should be organized for efficient use. The room should be warm enough to be comfortable for the client. Providing privacy is important. Most of the people feel embarrassed if their bodies are exposed or if others can overhear or view them during the assessment. Culture, age and gender of both the client and the nurse influence how comfortable the client will be and what special arrangements might be needed. For example, if the client and nurse are of different genders, the client might prefer being examined by same gender person as that of the client.

#### *Positioning*

Several positions are frequently required during the physical assessment. It is important to consider the client's ability to assume a position. The client's physical condition, energy level and age should also be taken into consideration. Some positions are embarrassing and uncomfortable and therefore, should not be maintained for long. The assessment is organized so that several body areas can be assessed in one position, thus minimizing the number of position changes needed.

#### *Draping*

Drapes should be arranged so that only the area to be assessed is exposed and other body areas are covered. Drapes provide not only privacy but also warmth. Drapes are made of paper, cloth or bed linen.

#### *Instrumentation*

All equipment required for the health assessment should be clean, in good working order, and should be readily accessible.

**Preparation of Equipment**

Refer to Table 36.1 and Figure 36.1 for purpose of various equipment.

**TABLE 36.1:** Purpose of various equipment

| Equipment | Purposes |
|---|---|
| Sphygmomanometer | To measure blood pressure |
| Stethoscope | To listen to the body sounds |
| Fetoscope | To listen the fetal heart sounds (FHS) |
| Temperature, Pulse, Respiration (TPR) tray | To assess the vital signs |
| Tongue depressor | To examine the mouth and throat |
| Pharyngeal retractor | To examine the larynx |
| Tape measure | To measure height, circumference of the head and abdomen |
| Flash light | To visualize any part |
| Weight machine | To check the weight |
| Ophthalmoscope | To examine the inner part of the eyeball |
| Otoscope | To examine the ear |
| Tuning fork | To test the hearing |
| Nasal speculum | To examine the nostrils |
| Percussion hammer, safety pins, cotton wool, cold and hot water in test tubes | To test reflexes and neurological examination |
| Vaginal speculum | To examine the genitals in women |
| Proctoscope | To examine the rectum |
| Gloves | To examine the pelvis internally |
| Sterile specimen bottles, slides, cotton applicators | To collect the specimens, if necessary |
| Thermometer | To check body temperature |

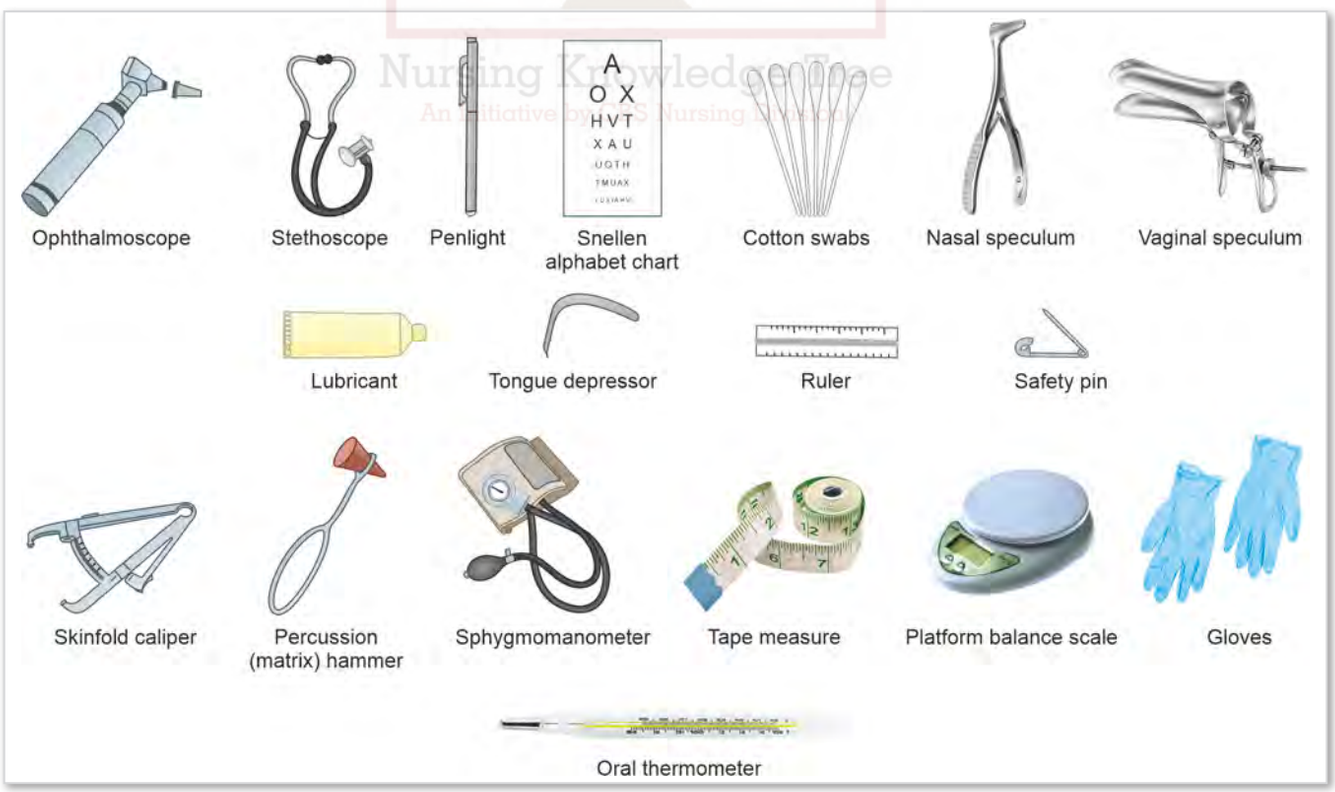


**Fig. 36.1:** Equipment used for physical examination

## METHODS OF EXAMINATION

There are four methods of examination: (1) Inspection, (2) Palpation, (3) Percussion and (4) Auscultation. Olfaction is another method of examination.

### 1. Inspection

Inspection is the visual examination, that is, assessing by using sense of sight. The nurse inspects with the naked eye and with a lighted instrument such as ophthalmoscope (used to view interior of the eye). In addition to visual observations, olfactory (smell) and auditory (hearing) cues are noted. Nurses frequently use visual inspection to assess size, shape, moisture, color, and symmetry of the body. Lighting must be sufficient to see clearly; either natural or artificial. When using the auditory senses, it is important to have a quiet environment for accurate hearing. Observation can be combined with the other assessment techniques.

### 2. Palpation

Palpation is the examination of the body using the sense of touch. The pads of fingers are used because the concentration of nerve endings makes them highly sensitive to tactile discrimination. Palpation is used to determine:

- Texture (e.g., of hair).
- Temperature (e.g., of a skin area).
- Vibration (e.g., of a joint).
- Position, size, consistency, and mobility of organs or masses.
- Distention (e.g., of urinary bladder).
- Pulsation.
- Presence of pain upon pressure.

There are two types of palpation, light and deep. Light (superficial) palpation should always precede deep palpation. For light palpation, (Fig. 36.2) the nurse extends the dominant hand's fingers parallel to the skin surface and presses gently while moving the hand in a circle. With light palpation, the skin is slightly depressed. If it is necessary to determine the details of a mass (Box 36.1), the nurse presses lightly several times rather than holding the pressure.

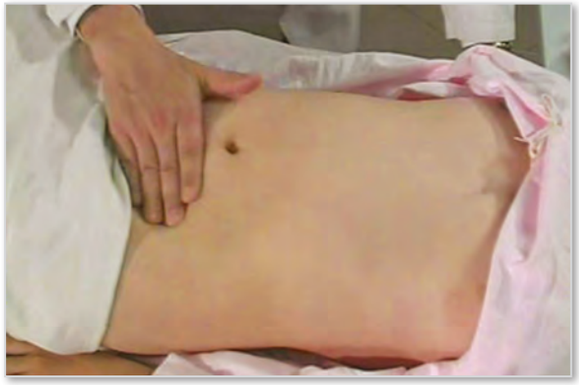

**Fig. 36.2:** Light palpation

**Box 36.1**

**Characteristics of Masses**

- **Location:** Site of the body, dorsal/ventral surface
- **Size:** Length and width in centimeters
- **Shape:** Oval, round, elongated, irregular
- **Consistency:** Soft, firm, hard
- **Surface:** Smooth, nodular
- **Pulsatility:** Present or absent
- **Mobility:** Fixed, mobile
- **Tenderness:** Degree of tenderness to palpation.

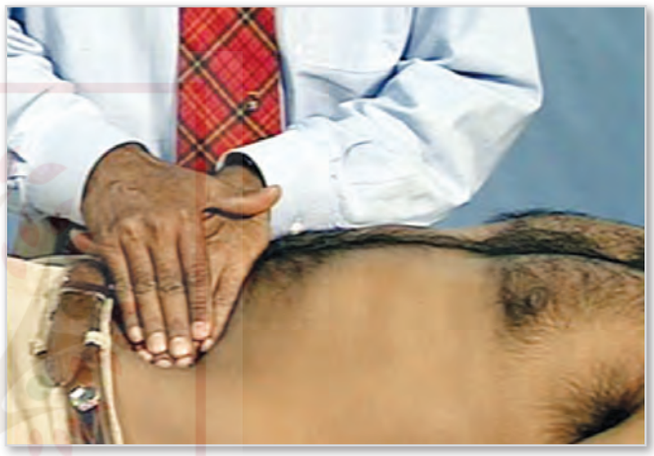

**Fig. 36.3:** Deep palpation

Deep palpation is done with two hands (bimanually) (Fig. 36.3) or one hand. In deep bimanual palpation, the nurse extends the dominant hand as for light palpation, then places the finger pads of the non-dominant hand on the dorsal surface of the distal surface of the distal interphalangeal joint of the middle three fingers of the dominant hand.

The top hand applies pressure while the lower hand remains relaxed to perceive the tactile sensations. For deep palpation using one hand, the finger pads of the dominant hand press over the area to be palpated. Often the other hand is used to support a mass or organ from below.

Deep palpation is usually not done during a routine examination and requires significant skill. It is performed with extreme caution because pressure can damage internal organs. It is usually not indicated in clients, who have acute abdominal pain or pain that is not yet diagnosed.

To test temperature, it is best to use the dorsum or back of the hand and fingers, where the skin is thinnest.

To test for vibration, the nurse should use the palmar surface of the hand.

**For doing palpation:**

- The hands of the nurse should be clean and warm, and the fingernails should be short.
- Areas of tenderness should be palpated first.
- Deep palpation should be done after superficial palpation.

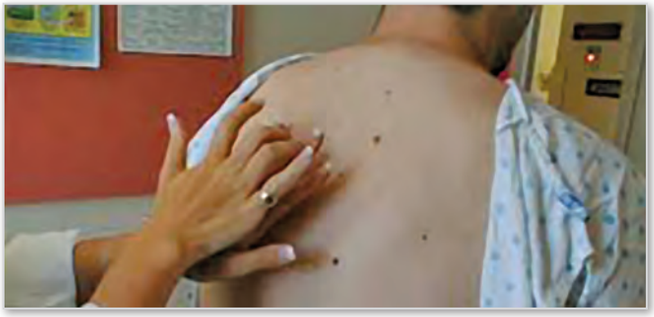

Fig. 36.4: Percussion

The effectiveness of palpation depends largely on the client's relaxation. Nurses can assist a client to relax by:

- Gowning or draping the client appropriately.
- Positioning the client comfortably.
- Ensuring that their own hands are warm.

- During palpation, the nurse should be sensitive to the client's verbal and nonverbal (facial) expressions indicating discomfort.

## 3. Percussion

Percussion is the act of striking the body surface to elicit sound that can be heard or vibrations that can be felt. There are two types of percussion: direct and indirect.

In **direct percussion,** the nurse strikes the area to be percussed directly with the pads of two, three or four fingers or with the pad of middle finger. The strikes are rapid, and the movement is from the wrist. It is useful in percussing adult's sinuses (Fig. 36.4).

**Indirect percussion** is striking a finger held against the body area to be examined. In this technique, the middle finger of the non-dominant hand, referred to as the pleximeter, is placed firmly on the client's skin. Only the distal phalanx and joint of this finger should be in contact with the skin. Using the tip of the flexed middle finger of the other hand, called the plexor, the nurse strikes the pleximeter, usually at the distal interphalangeal joint. The angle between the plexor and the pleximeter should be 90 degrees, and the blows must be firm, rapid, and short to obtain a clear sound. Percussion is used to determine the size and shape of the internal organs by establishing their borders. It indicates whether tissue is fluid-filled, air-filled or solid. Percussion elicits five types of sound: Dullness, flatness, resonance, hyper-resonance and tympany (Table 36.2).

## 4. Auscultation

Auscultation is the process of listening to sounds produced within the body. It may be direct or indirect. Direct auscultation is use of the unaided ear, for example, to listen to a respiratory wheeze or the grating of a moving joint (Fig. 36.5).

**TABLE 36.2:** Percussion sounds and location

| Sound | Intensity | Quality | Location |
|---|---|---|---|
| Flatness | Soft | Extremely dull | Muscle, bone |
| Dullness | Medium | Thud-like | Liver, heart |
| Resonance | Loud | Hallow | Normal lung |
| Hyper-resonance | Very loud | Booming | Emphysematous lung |
| Tympany | Loud | Musical | Stomach filled with gas/air |

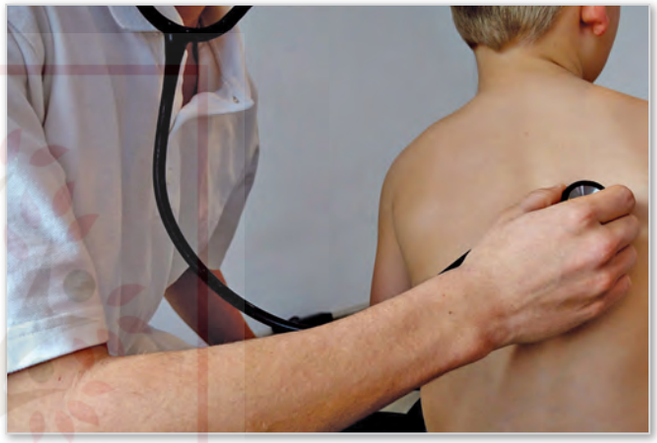

Fig. 36.5: Auscultation

Indirect auscultation is performed by placing the diaphragm or bell of stethoscope against the body part being assessed. The stethoscope is used primarily to listen to sounds from within the body, such as bowel sounds or valve sounds of the heart and blood pressure (Fig. 36.6).

The diaphragm best transmits high pitched sounds, e.g., bronchial sounds and the bell best transmits low-pitched sounds such as some heart sounds. If the client has excessive

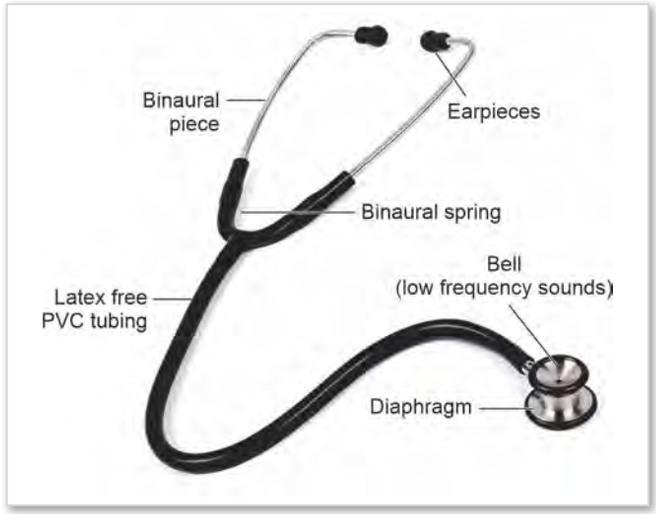


Fig. 36.6: Stethoscope

hair, it may be necessary to dampen the hair with a moist cloth so that they will lie flat against the skin and not interfere with clear sound transmission.

Four characteristics of sound are assessed by auscultation:

1. Pitch (ranging from high to low).
2. Intensity, loudness ranging from soft to loud.
3. Quality, e.g., gurgling, swishing, whistling.
4. Duration as short, medium or long.

For auscultation, the nurse should expose the part to be listened to, use the proper part of the stethoscope and listen in quiet environment.

### Olfaction

Olfaction means assessing the patient with the source of body odor. Olfaction helps to detect abnormalities that cannot be recognized by other means. For example, there is fruity smell from oral cavity in a patient with diabetic ketoacidosis or presence of alcohol smell, in which alcohol intoxication can be suspected.

## GENERAL SURVEY

Health assessment begins with a general survey that involves observation of the client's general appearance and mental status, measurement of vital signs, height and weight. Many components of the general survey are assessed while taking the client's health history, such as the client's body build, posture, hygiene and mental status.

Note proportion of height and weight, which provides insight into nutritional status. Observe whether the patient has an erect or slumped posture and evaluate movements and gait pattern for coordination. Uncoordinated or spontaneous movements may suggest neurologic problems. Note signs of illness, such as changes in posture, skin color, and respirations, nonverbal communication of pain or distress and short attention span, observe hygiene and grooming and note any deficits, e.g., patients with inappropriate dress (wrong for the season) or dirty/torn clothes, etc. Assess speech content and pattern, orientation to time, place and person and appropriate verbal responses (cognitive processes).

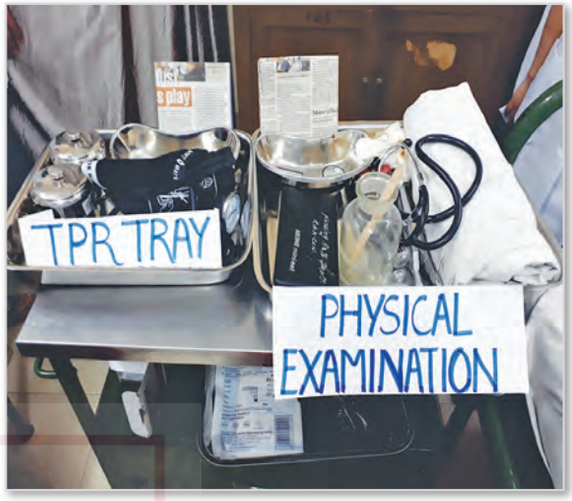


**Fig. 36.7:** TPR and physical examination tray

Clues to mood and mental health are provided by speech, facial expressions, ability to relax, eye contact and behavior.

### Vital Signs

Vital signs are measured to establish baseline data against which to compare future measurements and to detect actual and potential health problems (Fig. 36.7). Vital signs are discussed in detail in Unit VIII (Physiological Assessment).

### Height and Weight

The ratio of height to weight is an assessment of overall health and over nutrition or under nutrition. Height and weight should be measured using accurate scales and measuring devices. If the patient cannot stand erect, weight can be obtained using a chair or bed scale. The patient's actual height and weight can be compared with recommended average weights or from a standardized reference chart (Table 36.3).

**TABLE 36.3:** Height and weight table

| Male | | | Female | | |
|---|---|---|---|---|---|
| **Height in feet** | **Height in meter** | **Ideal weight** | **Height in feet** | **Height in meter** | **Ideal weight** |
| 4'6" | 1.3524 | 28–35 kg | 4'6" | 1.3524 | 28–35 kg |
| 4'7" | 1.3778 | 30–39 kg | 4'7" | 1.3778 | 30–37 kg |
| 4'8" | 1.4052 | 33–40 kg | 4'8" | 1.4052 | 32–40 kg |
| 4'9" | 1.4286 | 35–44 kg | 4'9" | 1.4286 | 35–42 kg |
| 4'10" | 1.454 | 38–46 kg | 4'10" | 1.454 | 36–45 kg |
| 4'11" | 1.4794 | 40–50 kg | 4'11" | 1.4794 | 39–47 kg |

*Contd...*

| Male | | | Female | | |
|---|---|---|---|---|---|
| **Height in feet** | **Height in meter** | **Ideal weight** | **Height in feet** | **Height in meter** | **Ideal weight** |
| 5'0" | 1.5 | 43–53 kg | 5'0" | 1.5 | 40–50 kg |
| 5'1" | 1.5254 | 45–55 kg | 5'1" | 1.5254 | 43–52 kg |
| 5'2" | 1.5503 | 48–59 kg | 5'2" | 1.5503 | 45–55 kg |
| 5'3" | 1.5762 | 50–61 kg | 5'3" | 1.5762 | 47–57 kg |
| 5'4" | 1.6016 | 53–65 kg | 5'4" | 1.6016 | 49–60 kg |
| 5'5" | 1.627 | 55–65 kg | 5'5" | 1.627 | 51–62 kg |
| 5'6" | 1.6524 | 58–70 kg | 5'6" | 1.6524 | 53–65 kg |
| 5'7" | 1.6778 | 60–74 kg | 5'7" | 1.6778 | 55–67 kg |
| 5'8" | 1.7032 | 63-70 kg | 5'8" | 1.7032 | 57–70 kg |
| 5'9" | 1.7286 | 65–80 kg | 5'9" | 1.7286 | 59–72 kg |
| 5'10" | 1.754 | 67–83 kg | 5'10" | 1.754 | 61–75 kg |
| 5'11" | 1.7794 | 70–85 kg | 5'11" | 1.7794 | 63–77 kg |
| 6'1" | 1.8 | 72–89 kg | 6'1" | 1.8 | 65–80 kg |

Children up to 2 years of age should have their height measured in the recumbent position with the legs fully extended. Infants should be weighed without clothing.

### *Obtaining Height and Weight with an Upright Balance Scale*

#### Obtaining Height

- Ask the patient to remove shoes.
- Raise L-shaped sliding arm on the measuring device attached to the scale little higher than the patient's approximate height.
- Ask the patient to step on the platform of the scale and stand erect with the back to the measuring device and the heels together.
- Lower the L-shaped sliding arm till it rests on top of the patient's head.
- Read the height in inches and record.
- Ask the patient to step down from the platform.

#### Obtaining Weight

- Balance the scale on zero.
- Ask the patient to remove shoes and heavy clothing and step onto the platform.
- Move the sliding indicator to the left until the scale balances.
- Read the weight in kgs and record.
- Ask the patient to step down from the platform.
- Return the scale weight indicator to zero.

**Note:** Daily weights should be obtained at the same-time each day preferably early morning, with the patient wearing the same clothing, and using the same scale.

## SUMMARY

- Health assessment has two aspects: The nursing health history and the physical examination.
- In physical Examination, four techniques are used: Inspection, palpation, percussion and auscultation.
- **Inspection** is the visual examination. **Palpation** is the examination of the body using the sense of touch. **Percussion** is used to determine the size and shape of the internal organs by establishing their borders. **Auscultation** is the process of listening to sounds by using stethoscope to listen to sounds from within the body.

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# STUDENT ASSIGNMENT

## LONG ANSWER QUESTIONS

1. Describe the nurses' role in physical examination of patient.
2. Explain the methods of examination in detail.

## SHORT ANSWER QUESTIONS

1. List the methods used for physical examination.
2. Mention the characteristics of masses.
3. Define percussion and its types
4. What are percussion sounds and location?
5. How will you prepare a client for physical examination?

## MULTIPLE CHOICE QUESTIONS

**1. Pleximeter is used in:**
a. Inspection b. Auscultation
c. Palpation d. Percussion

**2. Which of the following body part is good for measuring temperature?**
a. Dorsum or back of hand
b. Pads of fingertips
c. Palm of hand
d. None of the above

**3. Which of the following body part is more sensitive to vibrations?**
a. Back of hand b. Palm of hand
c. Pads of fingertips d. None of these

**4. What kind of sound (percussion) can be heard in stomach filled with gas?**
a. Dullness b. Resonance
c. Tympany d. Hyperresonance

**5. Percussion sound of consolidated lung is:**
a. Resonant b. Hyperresonance
c. Flat d. Dull



***ANSWER KEY***

**1.** d **2.** a **3.** b **4.** c **5.** d

Textbook of

# Nursing Foundations

for GNM Nursing Students

## Salient Features

- This textbook has been designed for undergraduate nursing students, especially for the students of GNM Nursing programs.
- All the recent updates have been covered extensively throughout the book.
- Nursing Consideration boxes covered throughout the book for better understanding of the clinical practices.
- Each and every skill procedure has been presented in a tabular format with standard nursing process approach—Assessment, Planning, Implementation, and Evaluation—with rationale at every step and documentation.
- *First Aid, Community First Aid, Diagnostic Techniques* and *Rehabilitation* are some of the important topics which have been covered in detail for the first time in this edition.

**Learning Objectives** given in the beginning of each chapter enable the student to know what he/she will learn after reading.

**LEARNING OBJECTIVES**

*After the completion of the chapter, the readers will be able to:*

- Identify factors influencing environment.
- Explain the importance of maintaining proper environment.

Every chapter begins with a **Chapter Outline** to provide a glimpse of the content discussed.

**CHAPTER OUTLINE**

- Introduction
- Factors Affecting the Environment
- Reduction of Physical Hazards
- Factors Affecting Safety

**Key Terms** used in the chapter are presented to familiarize the readers with the important terminologies.

**KEY TERMS**

**Agent:** Is the first link in the chain of disease transmission, it can be Biological agent, Nutritional agent, Chemical agent, Physical agent or Social agent.

Informative **Boxes** have been supplemented throughout the book to facilitate extra knowledge.

**Box 44.1**

**Using an incentive spirometer**

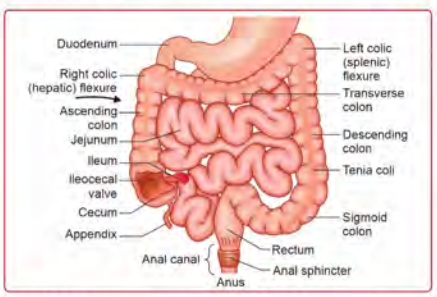
- Hold and place spirometer in an upright position
- Exhale normally
- Seal the lips tightly around the mouthpiece

**Remember Boxes** include the vital nursing facts which are extremely valuable for practicing nurses.

**Remember**

- The nursing diagnosis must be developed from the data, never the other way round.

Studded with 500+ fully colored **Images and Illustrations** for easy grasp of the relevant topic.




Numerous **Tables** are used to clarify the concepts and make the reading enjoyable and informative.

**TABLE 27.1:** Characteristics of normal and abnormal urine

| Characteristic | Normal | Abnormal |
|---|---|---|
| Amount in 24 hours (adult) | 1,200–1,500 mL | <1,200 mL or above 1500 |
| Color, clarity | Straw amber, transparent | Dark amber, cloudy, dark orange, red or dark brown, mucous plugs, viscid, thick |

**Skill procedures** supplemented with theory for better understanding of their implementation in clinical settings.

**SKILL:** HEATING LAMP APPLICATION

| Articles | Rationale |
|---|---|
| A lamp with required voltage | To apply heat |
| Measuring tape | To check proper distance of the lamp and the body |

Each and every chapter ends with **Summarized** one-liner for quick revision of the chapter.

**SUMMARY**

- Application of heat is commonly used in the hospital and home as therapeutic measure. It causes vasodilatation and increase of blood flow to the affected area.

Detailed **Student Assignment** in the form of exercises in each and every chapter will facilitate structured learning and revision of the material provided in the respective chapters.

**STUDENT ASSIGNMENT**

**LONG ANSWER QUESTIONS**

1. Discuss the effects of cold application.

**SHORT ANSWER QUESTIONS**

1. Write the purposes of cold application.
2. Give examples of local and general cold application.

## About the Author

**Harindarjeet Goyal** *PhD, MPhil, MSc (MSN), BSc (Hons.), RN, RM* is a former Principal, Rajkumari Amrit Kaur College of Nursing, New Delhi. She held numerous positions, viz. Clinical Instructor, Tutor, Assistant Professor, Associate Professor, Professor-cum-Vice Principal and Officiating Principal, during her illustrious career spanning over 44 years.

She received her BSc (Hons.) degree in the year 1975 from Rajkumari Amrit Kaur College of Nursing affiliated to University of Delhi. Thereafter, she taught Nursing Foundations and Medical Surgical Nursing to undergraduate students. She pursued her MSc (N) from the same college and continued as faculty member.

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Hyderabad | Jharkhand | Nagpur | Patna | Pune | Uttarakhand

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ISBN: 978-81-977500-8-3
9 788197 750083