Pediatric Nursing

By

Prof. Sabah Al-Sharkawi Asst. Prof. Zeniab Fathy Faculty of Nursing Ain Shams University

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جامعة : وزارة الصحه والسكان كلية : الادارة العامه للتعليم الفنى الصحى قسم : شعبة التمريض

توصيف مقرر دراسي

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		س المقرر :	٣- المستهدف من تدريس
a1- Identify the perspective of child	health nursing.		أ- المعلومات
a2-Describe the concepts of hospitali	zation.		والمفاهيم:
a3-Recognize the concepts, problem infant.	ns and nursing managemen	t of preterm	
a4 - Illustrate level of prevention wit	hin health promotion of child	ren.	
a5-Describe causes, clinical manifest pediatric health problem.	ation and nursing intervention	on of common	
a.6.Explain nursing intervention for			
 b1- Integrate problem solving approchable children with different health problem b2-Use reasoning skills in prioritizin illness. B3- Use teaching and learning princing children and their families. 	ach in formulating nursing ca m. g nursing care for children ir iples in implementing health t	re plan for n heath and eaching to	ب- المهارات الذهنية :
 c1 Assess physical and physiological adolescents. c2 - Assess motor, language developm according to milestones and recognize c3-Perform appropriate anthropome of infants and children. c4-Perform nursing procedures constnursing practice. 	growth in neonates, infants, on nent in infants, children and a ze abnormalities. etric assessment for the nutrit idered essential for the scope	children and adolescents ional status of pediatric	ج- المهارات المهنية الخاصه بالمقرر :
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- Chapter I: Perspectives of Pediatric Nursing	٤ - محتوى المقرر :
- Chapter 2: Growth and Development of Children	
- Chapter 3: Nursing Care of Preterm infant	
- Chapter 4: Health promotion of Children	
- Chapter 5: Nursing Care of Respiratory Disorders among Children	
- Chapter 0. Nursing Care of Urinary Tract Disorders among Children	
- Chapter 8: Nursing Care of Malnutrition Diseases of Children	
- Chapter 9: Nursing care of children with congenital anomalies	
- Chapter 10: Lab and clinical Practice and Checklists	
- Modified Lectures	٥- اساليب التعليم
- Group discussion	والتعلم
- Brain storming	
- Clinical in lab and in hospital through demonstration and	
redemonstration	
- Self-learning.	٦ ـ اساليب التعليم
- Referral to the academic advisor.	والتعلم للطلاب ذوي
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	١ - تعويم المعرب :
- Quiz 1: to assess knowledge in writing exam	أ- الاساليب المستخدمة
- Mid-term exam: to assess accumulative knowledge in writing exam.	
- Final written exam: to assess accumulative knowledge in writing	
exam.	
- Final clinical exam to assess the accumulative practice	
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Final exam Weekb	
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- Quiz 5	ج- توزيع الدرجات
- Midterm exam 10	
- Case study 5 Clinical practice 60	
- Final clinical exam 20	
- Final written exam 100	
- Total 200	
والمراجع :	 ٨_ قائمة الكتب الدراسية
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- Mckinney, E. (2012). Maternal-Child Nursing. 4th ed. London: Saunders Company.
- Potts, N. (2011). Pediatric Nursing: Caring for Children and their Families. London: Delmar Learning.





Course Description

Upon completion of this course, the student should be equipped with basic concepts, principles, knowledge and practices related to pediatric nursing to provide nursing care for children at different age group from birth to adolescent during health and illness.

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Core Knowledge

By the end of this course, students should be able to:

- Identify the role of pediatric nursing
- Describe the different stages of growth and development.
- Describe the nursing intervention for preterm infants.
- Describe the nursing care of children with different health problems.
- Explain the nursing intervention of children with congenital anomalies

Core Skills

By the end of this course, students should be able to:

- Perform a comprehensive nursing assessment of children at different age group.
- Demonstrate a bedside nursing care for children with different health problems
- Perform direct nursing care of children with congenital anomalies

Course	Overview
-	-

	Methods of Teaching/Training with Number of Total Hours per Topic					ig s per
ID	Topics	Interactive Lecture	Field Work	Class Assignmen	Research	Lab
1	Perspectives of Pediatric Nursing	3				-
2	Growth and Development of Children	6	12			6
3	Nursing Care of Preterm infant	6	12			6
4	Health Promotion for all age group	3	6			-
5	Nursing Care of Common Respiratory Disorders of Children	3	9			3
.6	Nursing Care of Gastrointestinal Disorders of Children	3	9			3
7	Nursing Care of Urinary Tract Disorders of Children	3	9	2		3
8	Nursing Care of Malnutrition Diseases among Children	3	9	5		3
9	Congenital Anomalies of Children	3	9			3
10	Case study	3		6		-
	TOTAL HOURS (144)	36	75	6		27
96546						

Chapter one

Perspectives of Pediatric Nursing

Objectives

- Identify the pediatric nursing
- Describe the qualities of good pediatric nurse
- Identify the role of pediatric nurse
- Explain the stages of hospitalization:
- Describe the roles of the pediatric nurse.

Introduction:-

The nurse is one of the important components of the health team in caring for children. The pediatric nurse gives direct bedside care to sick children, guide families in their care for their children during health and illness, in hospitals and at homes.

Definition of pediatric nursing:-

Pediatrics can be defined as the branch of medical science that deals with the care of children from conception to adolescence in health and illness. It is concerned with preventive, promote, curative and rehabilitative care of children.

Qualities of good pediatric nurse:-

- Good observer.
- Honest and truthful.
- Sympathetic, kind, patient and cheerful.
- Love to work with children.
- Interested in family care.
- Able to provide teaching to children and their families.

Role of Pediatric Nurse:-

- Primary roles
- Secondary roles
- Differentiated practice roles
- Advanced practice role

Primary roles

• Caregiver: helping patient, diagnosing, monitoring and administering therapeutic intervention

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- Advocate: assist family and children to make informed decisions
- Educator
- Researcher
- Manager or leader

The nurse can maintain child's health, help the child to achieve his optimal growth and development and prevent diseases and their complications through health education to the child and his parents.

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Se<mark>conda</mark>ry roles

- Coordinator
- Collaborator
- Communicator
- Consultant

The nurse has to provide care to sick children and their families by:

- Assessing their needs.
- Planning for their care
- Implementing the nursing care plan.
- Evaluating children's condition and the plan of care
- Providing health teaching to children and their parents

Differentiated practice roles

- Clinical care coordinator (associate degree)
- Care manager (BS degree)
- Clinical nurse (master degree)

The nurse should assist children to return to their maximal level of functioning following illness and or disabilities.

Advanced practice role

- Nurse practitioner
- Clinical nurse specialist
- Case manager

Concept of Child Care:

Health is a fundamental right of every human being "A healthy child becomes a healthy citizen and a healthy citizen makes a healthy nation".

Hospitalization:

Introduction:

Often, illness and hospitalization are the first crises children must face. Especially during the early years, children are particularly vulnerable to theses stressors because:

- 1- Stress represents a change from the usual state of health and environmental routine
- 2- Children have a limited number of coping mechanisms to resolve stressors

Causes of hospitalization:

- Illness.
- Surgery.
- **Diagnostic** procedures.
- Therapeutic procedures.

& Population Major stressors of hospitalization include separation, loss of control, bodily injury and pain

Definition of separation anxiety:-

Separation anxiety refers to excessive fear or anxiety about separation from home

Manifestations of separation anxiety in young children:

Stages of protest: behaviors observed during later infancy include:

- Cries
- Screams
- Searches for parent with eyes
- Clings to parent
- Avoids and rejects contact with strangers

Stage of despair: observed behaviors include:

- Is inactive
- Withdraws from others
- Is depresses, sad
- Lacks interest in environment
- Is uncommunicative
- Regresses to earlier behavior(e.g. thumb sucking, bedwetting, use of pacifier, use of bottle)

Behaviors may last for variable length of

time. Child's physical condition may deteriorate from refusal to eat, drink or move

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Stag<mark>e of detachment: observed behaviors include:</mark>

- Shows increased interest in surroundings
- Interacts with strangers or familiar caregivers
- Forms new but superficial relationships
- Appears happy

Detachment usually occurs after prolonged

separation from parent, it is rarely seen in hospitalized children. Behaviors represent a superficial adjustment to loss







Minimizing separation

- Involve parents in care
- Plan care with parents
- Provide facilities for parents to stay
- Bring comforters, photos, toys, music to remind child of home
- Support for parents with financial difficulties
- Monitor attachment

Nursing Care of the hospitalized child

The act of putting a child in the hospital adds stress to a child already coping with illness.

- With hospitalization comes a
 - Ith & Popula change from the usual state of health
 - Change in routine

Separation anxiety:

Nursing Interventions

- Preserve trust
- Reassure child parents will return
- Provide place for parent to stay in hospital to promote attachment
- Have parents leave personal articles with child (pictures, toys, cloths etc.)
- Maintain pre-hospital routines and rituals when possible.
- Return control to parent and child by providing choices.

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- Providing developmentally appropriate activities
- Using play to ease children's fears
- "Normalizing" the Hospital Environment
 - ✓ Promote freedom of achievement
 - ✓ Maintain child's routine, if possible
 - ✓ Time structuring
 - ✓ Self-care (age appropriate)
 - ✓ Schoolwork
 - Friends and visitors
- Maximizing Potential Benefits of Hospitalization
 - ✓ Fostering parent-child relationships
 - ✓ Providing educational opportunities

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- ✓ Promoting self-mastery
- ✓ Providing socialization
- Supporting family members



Chapter two Growth and Development of Children

Objectives

- Define growth and development.
- Identify the principles of growth and development.
- Describe the different stages of growth and development of children at different age group.
- Assess the physical, physiological, cognitive, motor, emotional and social development of children at different age group.

1. Introduction of Growth and development

Growth

Growth is increase in physical size of the whole or any of its parts. It results from increase in number of cells of different organs. It can be measured by centimeters or kilogram, assessed by weight and height, head circumference and skin fold thickness

Development

Progressive increase in skills and capacity of function andit involves qualitative changes. It can be measured through observation.

Types of growth and development

A. Growth :

- 1. **Physical growth:**Can be assessing through head size, measurement of head circumference, thoracic diameter, weight, and height and arm circumference.
- 2. **Physiological growth**: This can be assessing through measurement of (vital signs) temperature, pulse, respiration and blood pressure

B. Development.

- 1. Motor development: e.g. Sitting, standing, running, usage of fine muscles
- 2. Intellectual development e.g. Problem solving, reasoning, mental (cognitive)
- **3. Social development**: e.g. Raising and training a child in the culture, self-concept, friendship
- 4. Emotional development e.g. Love , fear

Principles of growth and developmen

- 1- Growth and development are continuous processes
- 2- Each stage of growth and development are depends upon the proceeding one.
- 3- Each child has his own growth patterns, which vary within the child but within the normal rate.
- 4- All children go through a normal sequence of growth, but not in the same rate,i.e. (individual differences) are noticed.
- 5- Growth and development have predictable sequences, as all human beings go through the same stages on their way for physical growth and or development
- 6- Not all body parts grow in the same rate at the same time, e.g. during prenatal stage, head grow faster than the other organs, but after birth, the other organs are more rapid in growth than the head.
- 7- Although growth and development go through a fixed and precise order, they don't progress at the same rate. There are period of rapid growth and other period of slow growth.
- 8- Growth and development proceed in regular, related directions, which reflect the physical development and maturation of neuromuscular functions. These directions are pattern of growth and development.

Patterns of growth and development

- a- Cephalocaudal: Growth proceeds from head down to toes.
- **b- Proximodistal (Proximal to distal):** Growth proceeds from center of the body to the periphery e.g. stand; sit before the usage of fine muscles of hands.

c- .**General to specific:** Development proceeds from simple to complex function and activities

Cephalocaudal direction

The process of

cephalocaudal direction from head down to tail. This means that improvement in structure and function come first in the head region, then in the trunk, and last in the leg region.



Proximodistal direction

The process in

proximodistal from center or midline to periphery direction. development proceeds from near to far outward from central axis of the body toward the extremities



1

Development proceeds from general to specific responses



General to specific

Factors affecting growth and development

1. Hereditary or Genetic factors:

Geneticpredisposition is the importance factors which influence the growth and development.

2. Factors related to mothers :

a- Mothers' age: teenage mothers are more likely than those of older mothers to have premature children .mothers who are over 40 years are more likely than others to have infant Down syndrome.

b- Nutritional deficiencies: e.g. malnutrition.

c- Diabetic mother.

d- Exposure to radiation which causes gene mutations

e- Smoking.

f- Infection with German measles during the first trimester of pregnancy can cause fetal congenital anomalies.

g- Use of drugs.

3- Factors related to fetus:

- Mal-position in utero.
- Faulty placental implantation, which interferes with blood supply to fetus thus affecting the nutrients it needs.

4- External environmental factor:

- a. Socio-economic status of the family (e.g., low –socio-economic families).
- b. Child's nutrition as malnutrition.
- c. Child's health problems: congenital conditions.
- d. **Exercise**: it promotes the circulation, physiologic activity and stimulates muscular development.
- e. **Mass media**: they might have a positive or negative effect on children's behavioral development.

Stages of growth and development

1. Prenatal period: from conception to birth

- a. Germinal: conception to approximately two weeks
- b. Embryonic: 2 to 8 weeks
- c. Fetal: 8 to 40 weeks (birth)

- 2. Neonatal stage: from birth to 1 month
- **3. Infancy stage**: from 1 month to 12 months
- **4. Toddler stage** 1 to 3 years
- 5. Preschool stage: 3 to less than 6 years.
- 6. School stage : from 6 to less than 12 years
- 7. Adolescence stage: from 12 to approximately 18 years



Growth curve of pediatric measurement

How nurse can assess growth and development

- Nurse can assess growth through measurement of head circumference, thoracic diameter, weight and height and observation for closure of the fontanel and teeth eruption
- Nurse can assess development through observation of: motor, social, mental and emotional development for each stage of development.

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2. Growth and development of Newborn

Newborn stage is the first 4 weeks or first month of life. It is a transitional period from intrauterine life to extra uterine environment. The Gestational Age of normal newborn is from 37 weeks to 42 weeks of intrauterine life

Normal newborn infant

Physical growth

- **Weight** = 2.700 - 4 kg

Normal newborn lose 5 % to 10 % of weight by 3-4 days after birth as result of:

- Withdrawal of hormones from mother.
- Loss of excessive extra cellular fluid.

- Passage of meconium (feces) and urine.
- Limited food intake.

Length

- Boys average length = 50 cm
- Girls average length = 49 cm
- Normal range for both (47.5- 53.75 cm)

Head circumference

- 33-35 cm
- Head is ¹/₄ total body length
- Skull has 2 fontanels (anterior & posterior)

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Anterior fontanel

- Diamond in shape
- Located between two frontal and two parietal bones
- 3-4 cm in length and 2-3 cm width
- It closes at 12-18 months of age

Posterior fontanel

- Triangular
- Located between occipital and two parietal bones
- It closes by the end of the first to the second month of age
- **Caput-succedaneum:** Swelling or edema of the presenting part of skull due to pressure during labour leads to accumulation of fluids and disappear by the third day
- **Cephalo- hematoma**: Accumulation of blood between periosteum (membrane covers the surface of bone and flat bone of the skull). Disappear after few weeks.

Chest circumference: It is 30.5 to 33cm (usually 2–3cm less than head circumference).











Physiological growth

Vital signs

- Temperature (36.3 to37.2°C).
- Heart rate (100 to 160 b/min).
- Respiration (30 to 60 C/min).

TEMPERATURE Rectal 90.0° F to 99.5° F (35.6° C to 37.5° C)

RESPIRATION

Normal Variations

30 to 60 respirations per min

Average - 40 respirations per min

Axillary 97.6° F to 98.6° F (36.5° C to 37.0° C)





HEART RATE (APICAL)

Normal Variations

100 to 160 beats per min

BLOOD PRESSURE (AT BIRTH)

75/42

Systolis

60 to 80 mm Hg Diastolic

100 while sleeping 160 while crying

Skin characteristics

- 1. Skin color: The skin of the newborn is red or dark pink.
- 2. Lanugo hair: Is a fine hair over the body, most evident on the shoulders, back, extremities, forehead and disappear during the first weeks of life.
- 3. VernixCaseosa: Is a cheese like, yellowish white substance, sometimes liked to cream cheese cover the new born's skin
- 4. **Desquamation (peeling):** It occurs during the first 2 to 4 weeks of life, due to shrink or separation of the placenta
- 5. **Mongolian spots**: (Blue-back pigmented): At the base of the back and on the buttocks, usually disappear during the pre-school age without treatment

Senses of Newborn

Vision

Pupils react to light

Hearing

- Sounds are heard well before 10 days of life.
- The newborn infant responds to sounds with cry or eye movement.







Touch

- It is the most highly developed sense.
- It is mostly at lips, tongue, ears, and forehead.

Taste

Well developed as bitter and sour fluids are resisted while sweet fluids are accepted.

Smell

• Only evidence in newborn infant's search for the nipple, as he smell breast milk.

Reflexes of Newborn

- Feeding reflexes:
 - ✓ Rooting
 - ✓ Sucking
 - ✓ Swallowing
 - ✓ Gagging
- **Prot**ective reflex:
 - ✓ Blinking
 - ✓ Grasping
- ✓ Tonic neck
- Moro reflex
- *Vistry* of Hea • Coughing and sneezing

Needs of newborn infant

- Maintaining a clear airway.
- Warmth.
- Protection from infection.
- Love and security (attachment).
- Nutritional needs





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Nursing Care of newborn infant

1. Immediate assessment by Apgar scoring

	The Apgar score rates:	SIGN
K (3)	Respiration, crying	Heart Rate
12 A	Reflexes, irritability	Respirator Effort
	Pulse, heart rate	Muscle To
()	Skin color of body and extremities	Reflex Irritability
	Muscle tone	Color
	#ADAM.	-

CICN		21 21			
SIGN	0	1	2	1 min	5 min
Heart Rate	Absent	Less Than 100	Over 100	2	2
Respiratory Effort	Absent	Slow, Irregular	Good Cry	1	مړ
Muscle Tone	Limp	Some Flexion	Active Motion	1	Ъ
Reflex Irritability	No Response	Grimace	Cry	1	2
Color	Pale	Body Pink, Extr. Blue	All Pink	1	2
·	TOTAL	SCORE		6	10

2. Maintenance of a clear air way initiation of respiration

- 3. Maintain thermal environment
- 4. Clamping the infant's cord
- 5. Care of eyes
- 6. Weighing the newborn
- 7. Identification of the newborn
- 8. Breast feeding
- 9. Fostering and promoting parents-infant attachment

3. Growth and development of Infant

Definition of normal infant

& Population It is the period which starts at the end of the first month up to the end of the first year of age. Infant's growth and development during this period are rapid

Physical Growth of normal infant

Weight: the infant gains:

- Birth to 4 months $\rightarrow \frac{3}{4}$ kg /month
- 5 to 8 months $\rightarrow \frac{1}{2}$ kg / month
- 9 to 12 months $\rightarrow \frac{1}{4}$ kg/month

and

The infant is double his/her birth weight by 4-5 months and triple it by 10-12 months of age

Calculating infant's weight

Infants from 3 to 12 months

Weight = $\underline{Age in months} + 9$

2

Ex: weight of 9 months old infant = 9+9 = 18 = 9 kg

Length

• Length increases about 3 cm /month during the first 3 months of age

2

- Then it increases 2 cm /month at age of 4-6 months,
- Then it increases 1 ¹/₂/ month at 7 12 months

Head circumference

- It increases about 2 cm /month during the first 3 months
- Then, increases ¹/₂ cm/month during the second 9 months of age.

Ch<mark>est circ</mark>umference

By the end of the first year, it is equal to head circumference.

Physiological growth of infants:-

- Pulse 110-150 b/min
- Rasp 35 ± 10 c/min
- Breathe through nose.
- Blood pressure 80/50 ± 20/10 mmHg

Dentition: Eruption of teeth starts by 5–6 months of age. It is called "Milky teeth" or "Deciduous teeth" or "Temporary teeth".

PRIMARY DENTITION



Motor Development:

At 2 months: Turn from side to back.

At 3 months, the infant can

- Hold head erects and steady.
- Hold object put in hand
- At 4 months, the infant can: Sit with adequate support.
- At 5 months, the infant can: Site with slight support/Pull feet up to mouth when supine.
- At 6 months, the infant can: Sit alone briefly / Hold own bottle.



- At 7 months, the infant can: Sit alone. /Hold cup.
- At 8 months, the infant can: Site alone steadily/ Drink from cup with assistance.
- At 9 months, the infant can: Crawl (i.e. pull body while in prone position).
- At 10 months, the infant can: Walk but with help.
- At 11 months, the infant can: Walk holding on furniture.
- At 12 months, the infant can: Stand-alone for variable length of time/Walk in few steps

Emotional Development:

- □ Infant's emotions are instable, where it is rapidly changes from crying to laughter.
- □ Infant's affection for or love family members appear.
 - By 10 months, the infant expresses several beginning recognizable emotions, such as anger, sadness, pleasure, jealousy, anxiety and affection.
- By 12 months of age, these emotions are clearly distinguishable

Social Development:

- □ The infant learns that crying brings attention.
- □ The infant smiles in response to smile of others.
- □ The infant shows fear of stranger (stranger anxiety).
- **He responds socially to his name.**
- The infant develops sense of <u>trust</u>. Through the infant's interaction with caregiver (mainly the mother), especially during feeding, he learns to trust others through the relief of basic needs.
- □ If the infant not fulfill his needs, he develops sense of mistrust.

Needs of infant:

- **Love** and security.
- **Feeding**.
- **Sucking** pleasure.
- □ Warmth and comfortable.
- **Sensory stimulation**.

4. Growth and development of Toddler

Toddler stage is between 1 to 3 years of age. During this period, growth slows considerably.

Physical growth

Weight: Average weight gain 1.8 to 2.7kgm/year.

Formula to calculate normal weight of children over 1 year of age

Age in years x 2 + 8 =..... Kg

- Triple birth weight at the end age of one year.
- The average weight at 2 years is 12 kg



Population

***** Height:

- It increases about 10 to 12.5 cm/ year.
- 1-2 years increases 1 cm / month.
- Formula to calculate normal height of children over 1 yearof age

Age in years $x 5 + 80 = \dots Kg$

Head circumference

- Increases only about 2 cm during the 2nd year compared to 12 cm during the 1st year.
- Head circumference equal chest circumference at six month to one years of age
- One year to adult head increases 10 cm only.
- Anterior fontanel closes between 12 18 months of age.

Chest circumference

- During toddler years, chest circumference continues to increase in size and exceeds head circumference.
- Chest circumference is greater than of the head at 2 years

Abdomen:

- It is protruded and toddler appears " pot bellied .
- Because their abdominal muscles are not yet strong enough to support abdominal contents as well as they will later

Physiological growth

-Pulse: 80-130 beats / min (average 110 /min).

- **Respiration**: 20–30 C/min.

-Blood Pressure: 99/64 mm Hg.

Populatio **Teething:** By 2 years primary dentition of 16 teeth and 20 teeth by 30 months (2 ¹/₂ years).

- Bowel and bladder control: Daytime control of bladder and bowel control by 24- 30 months.

Senses:

- Binocular vision is well developed by 15 months of age. Visual acuity of 6/6 is achieved during this period.
- Senses of smell, hearing, touch, and taste becomes increasingly well developed.



Motor Development:

Motor development

15months

- **Gross motor:** Walks alone well can creep upstairs.
- **Fine motor:** Builds tower of 2-3 blocks.

Holds a cup with all fingers & grasped

18 months

Gross motor: Can walk up & down stairs with one hand held

Can run & jump in place

Fine motor: Holds cup with both hands

24 months (2years):

Gross motor: Runs well.

Fine motor:

- Builds a tower of 6 to 7 blocks.
- Removes most of own clothes.

30 months (2.5years):

- **Gross motor**: Jumps with both feet. **Fine motor**:
 - Drinks without assistance.
 - Buttons and unbutton from buttons

Language Development:

- 15th months: Says 4 to 6 words (mainly names).
- 18th months: Says 10 words or more.
- 24th months: vocabulary of almost 300 words.
- 30th months: Talks constantly, uses plurals, and gives first and last name.

Emotional Development:

- Autonomy versus shame and doubt
- Self-control separates from parent /caregiver
- Imitates adults and playmate cannot take turn in games until age 3 years
- Stranger anxiety should disappears by age 2 ½ to 3 years
- **Temper tantrums**: occur weekly in 50 to 80% of children
- Peak incidence 18 months most disappear by age 3





- Aggressive behavior towards new infant: peak between to 2 years but may be prolonged indefinitely
- Thumb sucking
- Toilet Training

Social Development:

- For toddler, play is the major socializing medium.
- Play during toddler age, is typically parallel beside rather than with another child.
- The toddler is very social being but still egocentric.
- He imitates parents.
- Notice sex differences and know own sex.
- Development of "Autonomy versus shame and doubt".
- Children who have learned to trust themselves and others during the infant year are better prepared to do this than those who cannot trust themselves or others.

Needs of toddler:

- 1. Love and security: feels secure in his/her parents' affectionate care of him.
- 2. Graded independence: learned gradually, give the child one situation in which he can guard him from physical and emotional trauma.
- **3. Elimination control or control of bodily functions:**
- Toilet training should be started when the toddler is physiologically and psychologically ready.
- He is physiologically ready when he can stand-alone.
- The average healthy, intelligent child usually accomplishes bowel control by the end of the (12-18) month.
- Daytime bladder control may be fairly well established by 2 years of age, and night control by 3 or 4 years.

4-Learning language:

- Learning to talk takes a long time.
- From the newborn's cry to the first spoken word is the change from a reflex that has a meaning for both the child and others.
- Between the age of one and three years the child is increasingly able to understand others and to express his feeling and ideas in word.

• The mothers' facial expression, gestures, and tone of voice help the child to understand the meaning of her words.

Care of toddler:

- **Physical care:** This will include bathing, dental care to prevent teeth decay, clothing and freedom to play.
- Clothing should be light or bright in color because children like bright colors.

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- Toddler needs freedom to play.
- Sleep:

The toddlers sleep on the average 12-14 hours out of 24 hours including a day time nap of one to two hours.

- Safety measures:
- Accidents are the major cause of death in children.
- Toddlers are at greatest risk for accidental ingestions.
- Other accidents common to toddlers include motor vehicle, burns, falls and playground injury.
- Prevention of accidents is an important aspect of the care of children of all ages and carefully observation is essential.
- Parents must be taught to be alert and know what their toddler is doing at all times.

PODU

- Nutrition:
- Toddler needs 1300 calories/day.
- Diets high in sugar should be avoided.
- Adequate calcium and phosphorus intake is important for bone mineralization.
- Milk should be whole milk until age 2 years.
- It is not recommended that fat be restricted for children under 2 years old; however, children over 2 years old should consume no more than 30% of total daily calories from fat.



Health protection:

- Immunization
- Injury prevention (accident prevention)

5. Growth and development of Preschool

Physical growth

Weight

- The preschooler gains approximately 1.8 kg/year, 3year = 14kg

Height

- Child doubles birth length by 4-5 years of age.
- Formula to calculate weight and height are the same as toddlers

Physiological growth Vital signs

- 1. **Pulse:** 80-120 beat / min (average 100 beat / min).
- 2. Respiration: 20-30 cycle/ minutes.
- 3. Blood pressure: 100/67 + 24/25.

Motor Development:

At 3 Years

Gross motor

Rides a tricycle.

Fine motor

Copies a circle and imitates a cross and vertical and horizontal lines.

<u>At 4 Years</u>

Gross motor

- Hops, jumps, and skips on one foot.
- Rides a tricycle or bicycle with training wheels.

Fine motor

- Copies a square and traces a cross.
- Draws recognizable familiar objects or human figures.

<u>At 5 Years</u> Gross motor

- Skips, using alternate feet.
- Jumps rope.

Fine motor

Draws a stick figure with several body parts, including facial features



Cognitive Development:

The preschool up to 4 years of age is in the pre-conceptual phase. He begins to be able to give reasons for

his belief and actions, but not true cause-effect

Language Development:

3years:

- Vocabulary of 800- 1000 words.
- Uses 4 words sentences.
- Ask why.

4years:

- Vocabulary of 1500 words.
- Uses 3 to 7 words sentences.
- Uses "I" in his speech

5years:

- Vocabulary of 2100 words.
- V of Health & Population Is. Asks for the meaning of words.

Emotional Development:

- Fears the dark
- Tends to be impatient and selfish .
- Expresses aggression through physical and verbal behaviors.
- Shows signs of jealousy of siblings. .

Social Development:

- The preschooler is in the stage where he <u>develops a sense of initiative</u>verses <u>guilt</u>,
- The child wants to learn what to do for himself, learn about the world and other people.
- Development a sense of guilt occurs when the child feels that his or her imagination and activities are unacceptable
- He is active imagination, creative and energetic.
- Egocentric
- Less dependent on parents
- May have dreams & night-mares

Needs of Preschool child:

1- Security and independence

- The child feels love and security when he has two parents. He needs their love and understanding.

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2- Guidance

- The parents besides showing love for him must teach and guide him toward maturity by suggestions not commands helpful the child in forming good relation with other people.

3- Sex information

- Sex education during pre-school years is important.
- The child learns that he or she is a boy or a girl.
- Parents should answer the child directly and honestly.

4- Learning language

- The pre-school child learns to communicate his feeling and ideas.
- This is a period of rapid vocabulary growth.
- He also learns by imitating adult and other children.
- **5- Religious education**
 - Religious can be understood taught that "God" loves him.

Problems of Preschool child:

- Thumb-Suckling:
- Encopresis
- Selfishness
- Masturbation
- Enuresis
- Bad language
- Hurting Others
- Destructiveness





1- Physical Care

- Pre-School child is gaining competency in self -care. Feeling of security in his home environment will help him to become independent in self-care.
- He needs help in his bath.
- He learns to feed himself, to dress and undress, to wash his face and hands, to brush his teeth and to toilet himself.

2- Sleep patterns

- The average pre-school sleeps 11 to 13 hours per day. _
- The sleep of the 3-years old is frequently disturbed at night. _
- Sleep problems are common and include, nightmares, night terrors.
- Most pre-school needs an afternoon nap until age 5 years. _
- Bedtime rituals persist.

3- Safety measures

Since pre-school children have more freedom, playing outdoors alone and frequently away from the safe environment, more accident are likely to occur.

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4- Health supervision

- **Regular** visits for physician are important at intervals usually every six months or yearly.
- The physician or nurse give complete examination as visual and auditory perception for the child should be records the growth, give advises about nutrition and any problems which occur in the management of the child.

5- Nutrition

The pre-school child is less interested in eating than he was during infancy because he interested in exploring his environment.

6. Growth and development of School Age Children & Popula

Physical growth

• The growth is gradual until puberty.

School-age child gains about 3.8 kg/year.

- Formula for 7 to 12 years = (age in years x 7) 5
- Weight at 6 years $\rightarrow 18:22$ /kgm.

School age is double weight at 12 years \rightarrow 39.5 :44kgm.

- Height:
 - Body proportion during this period: both boys and girls are long-legged.

2

• Formula is the same as toddlers and preschoolers.

at 6 years \rightarrow 117cm. 12 years \rightarrow 150cm.

Dentition: Permanent teeth erupt, starting from 6 years

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Healt

Physiological growth

Vital signs:

- Pulse: 90 ± 15 beats /min (75 to 105).
- **Respiration:** 21 ± 3 c/min (18 24).
- Blood pressure: 100/60 ± 16/10.

Motor Development:

<u>At 6 – 8 years</u>

Gro<mark>ss mot</mark>or

- Ride a bicycle.
- Runs, jumps, climbs, and hope.

Fine motor

- Knows left hand from right.
- Can brush and comb hair.

8-10 years

Gross motor

Beings to participate in organized sports.

Fine motor

- Use both hands independently.
- Prints fluently.
- Increased smoothness and speed in fine motor control.

At 10- 12 years

Gross motor

Enjoy all physical activities.

Fine motor

Motor coordination continues to improve



Cognitive Development:

- At 7-11 years, the child isable to function on a higher level in his mental ability.
- Greater ability to concentrate and participate in self-initiating quiet activities that challenge cognitive skills, such as reading, playing computer and board games.

Language Development:

- Sentence structure and use of grammar continue to improve.
- -Speech proceeds from egocentric to social.

Emotional Development:

- Fears injury to body and fear of dark.
- Jealous of siblings (especially 6–8 years old child).
- Curious about everything.
- Has short bursts of anger by age of 10 years but able to control anger by 12 years.

Social Development:

- Continues to be egocentric.
- The child develop sense of **Industry**
- Failure to develop a sense of industry result in inferiority (feelings of inadequacy) and child become more isolated.

Needs of School age Children:

- 1- Sleep and rest. 2- Bathing 3-Nutrition
- opulatio 4- Exercise and activity 5- Dental health
- 6- Education:
 - b- Religious education. Sex education. a-

School age Problems:

A. School phobia: All organic cause must be ruled out before school phobia. The most common complaints are abdominal pain, headache, vomiting, and regression.

B. Learning difficulties: The learning difficulties are represented in variety of specific learning disabilities in children. The difficulties are in reading, writing, and understanding.
Behavioral problems

Children sometimes employ aggressive, negative or disobedient behavior in an attempt to feel important and control others. The forms of aggression are:

c- Cheating a- Lying b- Stealing

***Health education**

• Encourage the rewarding system for desired behavior rather than punishing the undesired behavior.

B. Underfeeding

Nutritional problems

- A. Overfeeding (obesity)
- Informing parents about qualities of foods rather than quantities.

Communicable diseases

Ex.:Diphtheria, Typhoid fever, Hepatitis A virus.

• The nurse should assess the immunization status of school age and review the times when booster doses are needed.

Dental problems

- Good oral hygiene habits and brushing should be done after meals.
- Referral to dentist every period for dental check-up.

Skeletal problems

A- Bone fractures

B- Scoliosis.

7. Growth and development of Adolescence

Definition of adolescence

opulation Adolescent is a period of transition from childhood to adulthood. It begins with the appearance of secondary sex characteristics and ends when somatic growth is completed and the individual is psychologically mature, capable of becoming a contributing member of society.

Physical growth:

Weight:

- Growth begins earlier in girls (10 14 years, while 12 16 in boys).
- Males will gain 7 to 30 kg, while female will gain 7 to 25 kg.

Height:

Birth length triples by about age of 13.

- Males will gain 10 to 30 cm in height.
- Females will gain less height than males as they gain 5 to 20 cm.
- Growth in height ceases at 16 or 17 years in females and 18 to 20 in males.

Physiological growth

Heart Rate: 60 - 80 b\m

Respiration: 16-20 c\m.

Blood Pressure: 120/80 mm Hg.

Acne

It is an inflammation in sebaceous glands commonly in both sexes; affect mainly face, neck and chest.

Secondary sex characteristics:

Changes in girls

- Increases in transverse diameter of the pelvis.
- Development of the breasts.
- Change in the vaginal secretions.
- Growth of pubic and axillary hair.
- Menstruation (first menstruation is called menarche, which occurs between the age of 12 to 13 years old).

Changes in boys

- Increase in size of genitalia.
- Swelling of the breast.
- Growth of pubic, axillary, facial and chest hair.
- Change in voice.
- Rapid growth of shoulder breadth.
- Production of spermatozoa. (Which is sign of puberty).

Cognitive Development:

Through formal operational thinking, adolescent can deal with a problem.



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Emotional Development:

This period is accompanied usually by changes in emotional control. He may become hostile or ready to fight, complain or resist everything.

Social Development:

The child needs to know "who he is" in relation to family and society, i.e., he develops a sense of identity. If the adolescent is unable to formulate a satisfactory identity from the multi-identifications, he develop sense of self-confusion

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- Adolescent shows interest in other sex.
- He looks for close friendships.

Health Problems of Adolescence:

- Premenstrual syndrome
- Dysmenorrhea
- Size of the penis
- Masturbation
- Postural defects
- Fatigue
- Anemia
- Acne vulgaris
- Obesity

Needs of Adolescence:

- Integration of his personality for future responsibility.
- Emancipation from his parents and family.
- Creation of satisfactory relations with the opposite sex.
- Acceptance of a new body image after the rapid physical changes of this period.

ulation

- Decision about the vocation he will follow as an adult.
- Adjustments to the opposite sex.

Chapter Three Nursing Care of Preterm Infants

Objectives

- Define important terms related to prematurity.
- Identify the risk factors of preterm infants
- Describe the physical characteristics of preterm
- Recognize the problems of preterm infants
- Describe the nursing care of preterm infants

Introduction:

Preterm birth is the most common cause of death among infants worldwide. About 15 million neonates are preterm each year (5% to 18% of all deliveries).

Definitions of important terms

- 1. Gestational age (GA): the length of time from conception to delivery
- 2. **Full-term infant:** An infant born between the beginning of the 37 or 38 weeks and the completion of the 42 weeks of gestation, regardless of birth weight.
- 3. **Premature (preterm) infant**: An infant born before completion of 37 weeks of gestation, regardless of birth weight.
- 4. **Post mature (post term) infant**: An infant born after 42 weeks of gestational age, regardless of birth weight.
- 5. **Low-birth-weight (LBW) infant:** An infant whose birth weight is less than 2500g, regardless of gestational age.
- 6. Intrauterine growth retardation (IUGR) (Dysmature infant): infant suffering from intrauterine malnutrition due to placental insufficiency

Risk Factors of preterm infants

- Malnutrition either under-nutrition or obesity .
- Medical reasons for early delivery include preeclampsia and chronic diseases.
- Multiple pregnancies (twins, triplets, etc.) are a significant factor in preterm birth.
- Vaginal bleeding during pregnancy such as placenta previa
- Abnormal amounts of amniotic fluid.
- Anxiety and depression have been linked to preterm birth.

- The use of tobacco, cocaine, and excessive alcohol during pregnancy.
- Passive smoking and/or smoking before the pregnancy influences the probability of a preterm birth
- Neonates with birth defects are at higher risk of being born preterm.
- Infections.

Characteristics of Preterm Infants

Characteristics of preterm Infant:

- **Shape**: is very small and thin.
- Skin: lack of subcutaneous fat and the skin is wrinkled, redder and covered with lanugo hair.
- ✤ Head: is large in proportion to body.
- Ears: soft, lack of cartilage, and poorly developed.
- Thorax: fewer firms, and small, shallow, irregular respiration.
- ✤ Abdomen: large and protruding.
- Genital organs: small, un-descending testes in male and labia minora bulge than libia majora in females.
- Extremities: thin, small, tiny muscles, slow infrequent movements of limbs, the soles and palm have minimal creases.
- Fingernails and toenails: are abnormally soft, short, and do not extend to the end of the fingers.
- Feeble or absent crying

Problems of preterm infants

- 1. Difficult to establish and maintain respiration
 - Immaturity of the respiratory center.
 - Surfactant deficiency











- Weakness of muscles that move chest wall.
- Incomplete development of the capillaries and alveoli of the lung.
- Bones of chest wall retract during inspiration.
- Poor coughing reflex.
- Frequent episodes of apnea

2. Poor control of body temperature

- The temperature of the preterminfant depends on the temperature of the environment to maintain a normal body temperature due to:

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- The nervous system is poorly developed and the heat regulating centre in the brain is immature
- Increased body surface
- Decreased subcutaneous fat
- Poor muscular development





Convection

Radiation

Evaporation

Surface

3. Nutritional problems

- Poor suckling , swallowing and gag reflexes
- Small stomach capacity
- Tendency to distension and vomiting.
- Insufficient minerals, vitamins and deficiency of enzymes
- Relaxed cardiac sphincter
- Difficult fat, protein and lactose digestion

4. Increases the risk of infection

The preterm infant is highly susceptible to infection and poor handle infection due to:

- Poor antibody formation. -
- Lack immune substances from his/her mother which transmitted to the foetus during the last month of gestation.
- Poor protection of skin and mucous membrane.

Nursing Care of preterm infants

1. Care immediately after birth:

Immediate care of preterm and resuscitation in delivery room: It includes the initial Apgar scoring system for physical condition.

1. Admission of preterm to the Neonatal Intensive Care Unit (NICU):

- Infant require observation at a level of transitional care
- Infant require immediately admission to a level of intensive care.

Incubator care

- The most common type used is closed type,
- The nurse should provide care through sleeves or windows.
- Incubator can provide many benefits for the health care facilities
 - It prevents spread of infection
 - Maintain the body temperature
 - Facilitate the provision of oxygen therapy with different methods, and
 - Minimize degree of noise to the infant.
 - Incubator temp.= $32 36 \,^{\circ}\text{C}$
 - Room temp. 25 -32°C

Heat Regulation:

- Prevent heat loss through:
 - Evaporation
 - Conduction
 - Convection
 - Radiation
- Population A preterm infant lacks SC fat, which regulates body temperature. Because this fat is missing extra care must be taken to cover the skin and keep him warm.
- Preterm need extra heat for their fragile bodies.

Prevention of infection:

- Minimize manipulation.
- Follow the principals of aseptic technique.
- Have a special team of nurses to care for preterm infants _
- Isolation for the septic cases (neonates shows signs of infection) or with positive CRP titre. _
- Nurses, physicians, and visitors should wear special clothes
- Hand washing before and after doing any procedure with any neonates.
- Allow proper ventilation in the unit.

Signs of infection include:

- Refusal of feeding.
- Frequent loose stools.
- Instability of body temperature.
- Seizure activity.
- Discharge from eye, nose, or umbilicus.
- Respiratory infection
- Skin lesions.

Oxygen administration:

- It should be given with great caution because the risk of inducing the Retrolental fibroplasias, it should be used only when there is definite indications of dyspnea or cyanosis and not exceeding 40%.
- Covers the eyes carefully if it is administered by hood.
- Frequent suctioning and clear air ways if needed.
- Observe the respiratory rate.

<u>Charting oxygen intake:</u>

- Each neonate chart should contain a separate oxygen record which includes:
 - The physician written order for oxygen and its method of administration.
 - The duration of administration.
 - The oxygen concentration.
 - The infant's response to the concentration and its duration.

<u>Feeding and nutrition:</u>

- The method of feeding of the preterm infant depends on his ability to suck and swallow. Often these reflexes are absent and he makes no response to stimulation of his lips by a nipple or medicine dropper. So, types of feeding methods are:
 - Oral feeding (breast or bottle feeding).
 - Dropper.
 - Gavage feeding.

Preparation of feeds:

- The bottle and teats should wash in warm, soapy water with a bottle brush and rinsed, then sterile.

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- Sterilization of bottle by autoclave or boiling.
- Follow aseptic technique during preparation of feeding.
- Nurse should wear gown and mask during preparation of feed.
- Follow feed instructional chart to prepare accurate formula.

Handling:

- Gentle handling of the preterm infants.
- All the procedures should carry out while the preterm infant inside the incubator.

Weighing:

- Weigh the preterm infant daily
- The nurse carefully places the preterm infant in the scoop basket of the scale which is covered by sterile paper.
- Record the weight.

Administration of medication:

- The nurse should give the proper medication of right dose at right time

Charting intake and output:

- The nurse should record intake and output.
- Measure the amount of fluid intake as feeding or IV fluids.
- Measure output as urine, stool, and vomiting if present
- Measure the balance.

Bathing:

- It depends on the policy of the hospital.
- Bathing of the preterm infant through swab and warm water
- Bathing a preterm infant involves using a small amount of soap that is specially designed for preemies or bathing a preterm infant in plain water until the skin has developed

<u>Care of the eyes:</u>

- The eyes should be inspected daily, cleaning by warm sterile water and sterile cotton wool.
- Apply eye drops 4 times per day for the first week of life as prophylactic measures.

<u>Care of the cord:</u>

- It must be kept dry and clean and free of contamination by urine or stools.
- No powders should be used on the cord.
- Clean the cord with alcohol swab from downward to upward.

Kangaroo Care The touch of a baby's skin against her mother's is associated with a decrease in need for supplemental oxygen, an increase in weight gain, and temperature stability.

Chapter Four Health Promotion of Children

Objectives

- Define health promotion.
- Identify the goals of health promotion.
- Describe the components health promotion.

Introduction

Health promotion during childhood and adolescence is vitally important because during these critical periods of the life span that the learning of health related behaviors, attitudes, values and perceptions tasks place.

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Definition of Health Promotion

Health promotion refers Health promotion comprises efforts to enhance positive health and prevent ill health, through the overlapping spheres of health education, prevention and health protection".

- Examples include providing information and resources in order to:
- Enhance nutrition at each developmental stage
- Integrate physical activity into the child's daily events
- Provide adequate housing
- Promote oral health
- Foster positive personality development

Goals of Health Promotion

The overall goal of health promotion is to promote health (physical, mental and social) of children in different age groups.



Three overlapping spheres of health promotion

A- Health education

Defined as "any activity that promotes health related learning

B-Diseases Prevention

Level of Prevention: Prevention has three components, primary, secondary and tertiary.

- **Primary prevention:** this involves activities that preventing the occurrence of disease or injury through health teaching such as giving immunization for prevention of illness or teaching about car safety seats for prevention of injury
- Secondary prevention: Early diagnosis and early treatment to lessen the disease severity.
- **Tertiary prevention** (Rehabilitation): This involves preventing deterioration, by appropriate treatment, rehabilitation or palliative care. It involves providing support both emotional and practical advising and information giving.

LEVEL OF PREVENTIVE HEALTH جمهوریة مصر العربیة			
Level	Description	Actions	
Primary prevention	Activities that decrease	Giving immunizations	
	opportunity for illness or injury	Teaching about car safety seats	
Secondary	Early diagnosis and treatment of a	Developmental screening Vision	
prevention	condition to lessen its severity	and hearing screening	
Tertiary prevention	Restoration to optimum function	Rehabilitation activities for child	
		after a car crash	

C-Health protection

- It is concerned with legal and fiscal measures, regulations and policies and voluntary codes of practice.
- The aim of this sphere is to empower people to make healthy choices.
- .Protecting health by providing low cost housing to prevent homeless children or unsatisfactory living conditions. Popul

Components of Health Promotion

The component of health promotion includes:

- 1- Nutrition
- 3-Play 5- Sleep

- 2- Injury Prevention
- 4- dental Care
 - 6- Immunization7- Parental guidance

- **1-** Nutrition
 - □ Nutrition of children is a vital element of health promotion. It makes important contributions to general health and fosters growth and development. Eating proper foods for age and activity ensures that children have the energy for proper growth, physical activity, cognition, and immune function. Nutrition is closely linked to both health promotion and health maintenance.



□ Source of Calories: Each gram of carbohydrate or protein provides 4 cal and each gram of fat provides 9 cal.

Calories needs for children in different age groups:

- □ Infant: 110 cal /kg / day
- □ Toddler: 1300 cal / day

 \square Preschool child: 1800 cal / day

- \Box School child: 2400 cal /day
- □ Adolescent: *Girls 2400 cal/day

*Boys 2800-3000 cal/day

□ From the **2 years to adolescence**: amount of calories can be calculated by the following formula:

Age in years x 120 + 1000

2- Injury Prevention

- Accidents and injuries are a leading cause of death and disability for young children with many of these accidents being preventable. Young children are at higher risk of injuries overall.and certain injuries are more probable at different ages. Children are more likely to be injured when they are not under appropriate adult supervision.
- Toddlers are most susceptible to poisoning
- preschoolers to drowning, and
- ×. School-aged children to pedestrian accidents.

The vast majority of childhood injuries are preventable. Child care providers need to take specific steps to prevent injury in the child care setting

Common childhood injuries:

- Falls off beds and down stairs.
- Aspiration of small objects.
- Sty of Health & Population Poisoning from medication over dose or ingestion of toxic substances.
- Burns.
- Suffocation.
- Motor vehicles accidents.

3- Play

Play is relates to any activity engaged in for the enjoyment, it gives without consideration of the end result.

Value of play

- **1.** Physical value
 - Develop muscles properly and exercise all parts of the body.
 - It serves as an out let for energy which if pent up makes the child tense, nervous and irritable.



2. Educational value

 Young child learns to know the shapes, colors, sizes and textures of objects and their significance.

3. Therapeutic value

In everyday life the child need some release from the tensions that the restrictions imposed him by his environment.

4. Social value

- By playing child learn how to establish relationships with others and how to meet and solve problems come out through this relationship.
- Through cooperative games he learns to give and take.

5. Moral value

- He learns what the group considers right and wrong in the home or in the school.
- The children know that he must be fair, honest and truthful.

Types of play

1. Solitary play (Infancy period)

Children play with their toys alone, but within earshot of parents. At school they will play independently without reference to what any of the other is doing.

2. Parallel play (toddler)

Children playing the same game or with the same toy in the accompany of other children, but not with them. They play within sight and earshot of another child, perhaps playing with a similar toy but in their own way.

3. Associative play (preschool age)

Playing the same game or activity together. In which two or three use the same equipment and participate in the same games, but each in his or her own way. Then gradually children begin to participate.

4. Cooperative play (preschool age)

Sharing of ideas and games with each other. They share playthings and ideas, organize games and make friends. This type reflects the children's growing capacity to accept and respond to ideas and actions that are not originally their own.

5. Competitive play(school age)

This type characterized by competitions during the play activities, which is common in the adolescence











Age	Туре
Infant	Solitary
Toddler	Parallel
Preschool	Co-operative
School	Competitive

4- Dental care :

- A child should begin brushing teeth with a small soft toothbrush with parental assistance around age.
- The child should avoid sugary foods to help

prevent dental caries.

5- Sleep pattern:

- During the first month after birth, an infant sleep most of the time (about 20 hours a day).
- With age, daily sleep time decrease as awake and alert times increase.
- Infants sleep about 18 hours, they takes morning and afternoon napes.
- The toddler and preschool need about 12 hours of sleep each day
- School age children's sleep requirements vary but typically range from 10 to 12 hours a night.
- During adolescence the child stay out of his home and this interfere with sleep and rest requirements.
- 6- **Immunization:** is an effort to produce immunity to a disease without illeffect, so immunization can therefore use to produce both active and passive immunity.



Vaccination are used to prevent specific infectious diseases, vaccines are of three types (live attenuated, killed, toxoid).

Classification of immunization:

Classification of immunization				
Natural		Artif	ficial	
Active	Passive	Natural	Passive	
The immune system makes antibodies after exposure to disease e.g : Measles	The neonate receives placental of maternal antibodies. This natural passive immunity	Induced by vaccination (immunization)	Injected antibodies provide immunity (gamma globulins)	

Nursing responsibilities (administration of vaccine)

Th<mark>e princip</mark>le precautions in administering immunizations include:

- Proper storage of the vaccine to protect its potency and institution of recommended procedures for injection.
- For protection against light the vial can be wrapped in aluminum foil.
- Periodic checks are established to ensure that no vaccine is used after its expiration date.
- Another important nursing responsibility is accurate documentation. Each child should have an immunization record for parents to keep.
- Any adverse reactions after the administration of any vaccine should be reported to the Physician.

7- Parental guidance

- Proper holding and positioning.
- Teach to care for infant (formula
- Preparation, use of pacifiers, oral hygiene, elimination pattern).
- Feeding choices and techniques
- Provide examples for appropriate toys.
- Provide information about safety measures.
- Instructions about immunization and its importance.
- Help parents to understand normal growth and development.



Chapter Five Nursing Care of Respiratory Disorders among Children

Objectives

- Identify the common respiratory problems in children
- Describe the nursing care of common upper respiratory tract disorders among children
- Describe the nursing care of common upper respiratory tract disorders among children

Respiratory System

The cells of the human body require a constant stream of oxygen to stay alive. The respiratory system provides oxygen to the body's cells while removing carbon dioxide. There are 3 major parts of the respiratory system: the airway, the lungs, and the muscles of respiration. The airway, which includes the mouth, nose. pharynx,



larynx, trachea, bronchi, and bronchioles, carries air between the lungs and the body's exterior. The lungsact as the functional units of the respiratory system by passing oxygen into the body and carbon dioxide out of the body. The muscles of respiratory system, including the diaphragm and intercostal muscles, work together to act as a pump, pushing air into and out of the lungs during breathing.

Problems of Upper Respiratory System

1- Nasopharyngitis: may be called "common cold"

Fever is common; child is managed at home. No specific treatment. Antipyretics are prescribed, rest and decongestants.

2- Pharyngitis:

- It is a relatively brief illness with an abrupt onset.
- The tonsils and pharynx may be inflamed and cover with exudate.
- This usually occurs by the 2nd day.
- 80-90% is viral infection
- A throat culture is recommended in patients who have a negative test result
- Children who experience group A B-hemolytic strep (strep throat) are at risk for acute rheumatic fever, an inflammatory disease of the heart, joints, and CNS, glomerulonephritis.
- Permanent damage can result from these factors, especially acute rheumatic fever.
- If strep throat is present, penicillin is prescribed in a dose sufficient to control the manifestations and to be taken for at least 10 days. IM penicillin G may be used.

Clinical manifestation:

Nasopharyngitis

- Young child: fever, sneezing, vomiting or diarrhea
- Older child: dryness and irritation of nose/throat, sneezing, aches, cough
- Pharyngitis
 - Young child: fever, malaise, anorexia, headaches
 - Older child: fever, headache, dysphagia, abdominal pain

Tonsillitis

- Masses of lymphoid tissue in pairs
- Often occurs with pharyngitis
- Characterized by fever, dysphagia, or respiratory problems forcing breathing to take place through nose



Nursing care of upper respiratory tract disorders

- Maintain patent airway
 - Oxygen with humidification
 - Keep resuscitation equipment at the bedside
 - Provide mist Cool mist humidifier or running hot water
- Meet fluid and nutritional needs
 - Cool, noncarbonated, non-acid drinks
 - Assess for difficulty swallowing may need IV therapy
- Keep quiet as possible

Tonsillectomy is the surgical removal of tonsils. The indications for tonsillectomy for "5 or more

infection of the tonsils per year despite therapy"

The nurse obtains a throat swab for culture. Special emphasis is placed on correct administration of oral medication and completing the course of antibiotic therapy.

Nursing care of tonsillectomy

- a. Providing comfort and minimizing activities or interventions that precipitate bleeding
- b. Maintain airway Place in prone or side-lying position to avoid aspiration until fully awake
- c. Monitor bleeding, esp. new bleeding
- d. Non aspirin analgesics
- e. Avoiding oral fluids until fully awake --then liquids and soft cool foods.
- f. Maintain airway Place in prone or side-lying position to avoid aspiration until fully awake

(B) Lower Respiratory Disorder

1. Pneumonia

Pneumonia is an infection of the lungs. The lungs are made up of small sacs called alveoli, which fill with air when a healthy person breathes. When an individual has pneumonia, the alveoli are filled with pus and fluid, which makes breathing painful and limits oxygen intake. Many different germs can cause pneumonia, including bacteria, viruses, and fungi.

Causes of Pneumonia

The most common are caused by viruses, including adenoviruses, rhinovirus, influenza virus (flu), respiratory syncytial virus (RSV), and para-influenza virus.

Symptoms of Pneumonia

The symptoms of pneumonia include:

• Rapid or difficult breathing

- Cough
- Fever
- Chills
- Loss of appetite
- Wheezing (more common in viral infections).
- Nasal congestion
- Breathing with grunting or wheezing sounds
- Chest pain
- Vomiting, Nausea and Diarrhea
- Abdominal pain
- Decreased activity

Treatment of Pneumonia

Pneumonia can be treated with antibiotics.

Nursing Interventions:

- Monitor respiratory status every 2 hours
- Give oxygen therapy according to physician prescription.
- Help patients cough up secretions / suctioning.
- Give a comfortable position that allows the child to breathe.
- Monitor blood gas analysis to assess respiratory status.
- Give fluid intake.
- Provide sputum for culture / sensitivity test.
- Record of intake and output.
- Encourage the mother to continue giving fluids orally and avoid the condensed milk / drink cold.
- Monitor fluid balance in the mucous membranes, skin turgor, rapid pulse, decreased consciousness, and vital signs.
- Keep drip infusion accuracy according to the physician prescription.
- Perform oral hygiene.

Bronchial Asthma

 Asthma is the most common chronic disease of childhood and can begin at any age. It isinflammatory disease of the airways characterized by mucosal edema and mucus production.



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- This inflammation ultimately leads to recurrent episodes of asthma symptoms: cough, chest tightness, wheezing, and dyspnea.
- Children with asthma may experience symptom-free periods alternating with acute phase that last from minutes to hours or days.

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Risk factors:

- Risk factors for asthma include family history
- Allergy (strongest factor)
- Chronic exposure to airway irritants or allergens (eg, mold, dust, or animals).
- Common triggers for asthma symptoms include airway irritants (eg, pollutants, cold, heat, strong odors, smoke, perfumes)
- Exercise, stress or emotional upset

Clinical manifestations of asthma

- Most common symptoms of asthma are cough (with or without mucus production), dyspnea, and wheezing (first on expiration, then possibly during inspiration as well).
- Asthma attacks frequently occur at night or in the early morning.
- Chest tightness and dyspnea occur.
- Expiration requires effort and becomes prolonged.
- Tachycardia.
- Eczema, rashes, and temporary edema are allergic reactions that may be noted with asthma

Nursing interventions

- The immediate nursing care of patients with asthma depends on the severity of symptoms.
- Assess the patient's respiratory status by monitoring the severity of symptoms, breath sounds and vital signs.
- Identify medications the patient is currently taking.
- Administer medications as prescribed and monitor the patient's responses to those medications.
- Administer fluids and monitor if the patient is dehydrated.
- Assist with intubation procedure, if required.
- Monitor for deteriorating respiratory status and note sputum characteristics.

Chapter Six

Nursing Care of Children with Gastrointestinal Disorders

Objectives

- Identify the causes and clinical manifestation of gastrointestinal disorders among children
- Perform nursing assessment to determine the degree of diarrhea and dehydration.
- Perform nursing intervention for children with gastrointestinal disorders.

1- Vomiting

Introduction

Vomiting is common in children are usually part of a mild, short-lived illness, frequently caused by a viral infection.

Although most children recover from nausea and vomiting without any treatment, it is important to know when to seek help if the child does not get better.

Why does vomiting occur?

Vomiting occurs when nerves in the body or brain sense a trigger, such as food poisoning, certain infections or medicines, or motion. Nausea usually, but not always, occurs before vomiting. Younger children may not be able to recognize nausea, although they may complain of a stomach ache or have other general complaints.

Causes of vomiting:

Vomiting can be caused by a number of different problems. The possible causes of vomiting depend upon a child's age.

- **Newborn:** A potential cause of vomiting in newborn includes a blockage or narrowing of the stomach (pyloric stenosis) or a blockage of the intestines (intestinal obstruction).
- Infants can also vomit because of infections of the intestine or other parts of the body.
- Older infants and children the most common cause of vomiting in older infants and children is infectious gastroenteritis (an infection of the stomach or intestines), usually caused by a virus. Vomiting caused by gastroenteritis usually begins suddenly and resolves quickly, often within 24 to 48 hours. Other signs of gastroenteritis can include nausea, diarrhea, fever, or abdominal pain.

Gastroenteritis can develop after eating contaminated food or putting a contaminated object (or hand) into the mouth. The viruses that commonly cause gastroenteritis are spread easily. Careful hygiene (especially hand washing) can prevent these infections from spreading.

 Adolescents — Similar to children, the most common cause of nausea and vomiting in adolescents is infectious gastroenteritis. Vomiting usually resolves within 24 to 48 hours in an adolescent with gastroenteritis.

Less common causes of vomiting in adolescents include appendicitis (inflammation of the appendix), gastric ulcers (of the stomach), pancreatitis (inflammation of the pancreas), inflammatory bowel disease and consumption of toxic substances (eg, overdose).

Nursing care of vomiting

Dietary recommendations — Children who are vomiting but are not dehydrated can continue to eat a regular diet as tolerated. Dehydrated children require rehydration (replacement of lost fluid).

Infants — if a breastfeeding infant vomits, he or she should continue to breastfeed. Oral rehydration solutions are not usually needed for infants who exclusively breastfeed because breast milk is more easily digested.

- If the infant vomits immediately after nursing, the mother can try to breastfeed more frequently and for a shorter time. For example, breastfeed every 30 minutes for five to 10 minutes. If vomiting worsens or does not improve within 24 hours, stop oral feeding and start IV infusion.
- Monitor for signs of dehydration, and do not force the child to eat, especially during the first 24 hours.
- Encourage the child to drink fluids.
- Apple, pear, and cherry juice, and other beverages with high sugar content, should be avoided. High fat foods are more difficult to digest, and should be also avoided.
- Sports drinks should also be avoided since they have too much sugar and have inappropriate electrolyte levels.
- Recommended foods include a combination of complex carbohydrates (rice, wheat, potatoes, and bread), lean meats, yogurt, fruits, and vegetables.

Medicines — Medicines to reduce nausea and vomiting, called antiemetics, might be recommended in certain situations (to reduce the risk of dehydration in children who vomit repeatedly or to reduce motion sickness).

2- Diarrhea

Diarrhea is defined as an increase in the frequency, volume and fluid content of stool. Rapid propulsion of intestinal contents through the small bowel results in diarrhea. Diarrhea is a hallmark sign of gastroenteritis.

Assessment: Patient may manifest

- Hyperactive bowel sounds
- Passage of loose liquid watery stools for more than 3 times
- Poor skin turgor
- Dehydration
- Dry lips and oral mucosa
- Pain
- Stomach cramping

Signs of mild dehydration include:

- A slightly dry mouth
- Thirst

• Children who are mildly dehydrated do not need immediate medical attention but should be monitored for signs of worsening dehydration.

Signs of moderate or severe dehydration include:

- Decreased urination (not going to the bathroom or no wet diaper in six hours)
- A lack of tears when crying
- A dry mouth
- Sunken eyes
- Cool or clammy hands and feet
- Listlessness

A child who is moderately or severely dehydrated should be evaluated as soon as possible.

Management of Dehydration:

Oral rehydration therapy — Oral rehydration therapy (ORT) was developed as a safer, lessexpensive, and easier alternative to intravenous (IV) fluids. Oral rehydration solution (ORS) is a liquid solution that contains glucose (a sugar) and electrolytes (sodium, potassium, chloride), which are lost during vomiting and diarrhea.



ORS does not cure vomiting and diarrhea, but it does help to prevent and treat the dehydration that can develop because of a vomiting illness.

- Give the fluid by teaspoonful (5 milliliters each) every one to two minutes or as tolerated.
- The recommended amount is 50 milliliters of ORS per kilogram
- For a 20-pound (9 kg) child, this would equal 100 teaspoons (450 milliliters) of ORS. This amount should be given gradually, spread out over about four hours.
- Measure the solution with a standardized medicine syringe or measuring cup or spoon, rather than a regular cup or spoon.
- After given the whole amount, the child can eat a normal diet.

Children who refuse to drink or who vomit immediately after drinking ORS should be monitored closely for dehydration. Children who are not dehydrated can continue to drink ORS between episodes of vomiting to prevent dehydration.

Hygiene measures — Hand washing is very effective and the preferred way to prevent the spread of infection. Wet hands with water and plain or antimicrobial soap, and rub them together for 15 to 30 seconds. Pay special attention to the fingernails, between the fingers, and the wrists. Rinse hand thoroughly, dry them with a paper towel, and throw away the paper towel.

Nursing management of dehydration:

Nursing Interventions	Rationale
Assess general condition and vital signs	For baseline data
Auscultate abdomen	For presence, location, and characteristics of bowel sounds
Discuss the different causative factors and rationale for treatment regimen	For patient education

Restrict solid food intake	To allow for bowel rest and reduce intestinal workload	
Provide for changes in dietary intake	To prevent foods/substances that precipitate diarrhea	
Limit high-fiber foods and so as fatty foods	To prevent gastric irritation	
Promote use of relaxation technique	To decrease stress and anxiety that can aggravate diarrhea	
Encourage oral fluid intake of fluids containing electrolyte	For fluid replacement	
Recommend products like yogurt	To restore normal flora	
Emphasize importance of hand washing	To prevent spread of infectious diseases	

3- Acute Pain

One of the manifestations of gastroenteritis is abdominal pain. During the course of inflammation, the body's immune response, causing the release of prostaglandin causing an increase in vascular permeability and causes pain, which felt by the patient in the abdomen.

Assessment: child may manifest

- Abdominal Pain
- Appears weak
- Limited range of motion
- Restlessness
- Irritability
- Reduced interaction with people
- sleep disturbances

Nursing Interventions

Nursing Interventions	Rationale
Review factor that aggravate or alleviate pain	To lessen/alleviate pain caused by various factors (administer meds via IV)
Instruct the mother to massage the area where pain is elicited if not contraindicated	To reduce pain and promote relief/comfort
Encourage pain reduction techniques	To promote healing and provide non-pharmacological pain reduction techniques
Provide adequate rest	To reduce pain and promote relief/comfort
Administer analgesics to maintain acceptable level of pain if not contraindicated	For child's comfort and relief from pain
Instruct child to perform deep breathing exercises (DBE)	Deep breathing exercises may reduce pain sensation/ used in pain management
Monitor effectiveness of pain medications	To promote timely intervention/ revision of plan of care

Chapter Seven Nursing Care of Children with Urinary Tract Disorders

Objectives

- Describe the function of the kidney.
- Identify the common urinary tract disorders
- Assess the child with urinary tract disorders
- Differentiate between acute glomerulonephritisand nephrotic syndrome.
- Perform accurate nursing care for children with urinary tract disorders

Introduction

The Urinary System is a group of organs in the body concerned with filtering out excess fluid and other substances from the bloodstream. The substances are filtered out from the body in the form of urine. Urine is a liquid produced by the kidneys, collected in the bladder and excreted through the urethra. Urine is used to extract excess minerals or vitamins as well as blood corpuscles from the body.

Anatomy of the Kidney

Renal Pelvis



Functions of the Kidney

Excretion (waste products: Urea, creatine).

•Regulation (pH of blood, electrolyte e.g. Na+,K+).

•Endocrinal functions.

-Rennin.(control the BP)

–Vitamin D.

-Transformations of amino acids (glutamine, synthesis of arginine and glycine)

1-Acute glomerulonephritis

Definition

It is an inflammation of the glomeruli of the kidney due to certain bacterial infection such as group A beta hemolytic streptococci, Viruses and parasites.

Symptoms appear to 3 weeks after the onset of streptococcal infection.

- A puffy face (edema) and discolored urine(hematuria).
- Fever (39.4 °C-40°C) at the onset but decreases in a few days to (37.8 °C).
- Slight headache and malaise are usual and vomiting.
- Hypertension appears in 60% to 70% of patients during the first 4 or 5 days.
- Visual disturbances, sleepiness, coma or seizures.
- Both hematuria and hypertension disappear within 2 weeks.
- Oliguria,
- Dyspnea, tachypnea and cough.

Warning Symptoms:

- Repeated vomiting
- Excessive fatigue
- High blood pressure
- Low back pain:
- Shortness of breath:
- Worsens with exertion
- Worsens when lying flat

Diagnostic assessment:

- Serum calcium and phosphate
- Complete blood count
- Kidney profile: includes sodium and potassium levels
- Urinalysis
- 24 hour urine for creatinine clearance
- Abdominal ultrasoundand Abdominal CT scan
- Kidney biopsy
- MRI scan of the abdomen

Complications

- Kidney failure
- Congestive heart failure
- Nephrotic syndrome



Management

Therapeutic management:

- Fluid restrictions and diets high in carbohydrates and fats and low in sodium, potassium or both.

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- Antihypertensive and diuretics.
- Antibiotics.
- Diuresis.
- Penicillin (during the acute stage to eradicate any existing infection).

2. Nephrotic Syndrome (Nephrosis:

Etiology:

The cause of nephrotic syndrome is unknown.

- Familial or genetic factors are found in a minority of cases.
- Causes of nephrotic syndrome include:
- Acute glomerulonephritis
- Allergies
- Cancer
- Infections:
- Endocarditis , HIV infection
- Hepatitis B , Hepatitis C
- Tuberculosis , Post-streptococcal glomerulonephritis
- Diabetes mellitus
- Leukemia
- Lymphoma
- Lupus
- Hypertension

Clinical manifestations:

- Swelling: of (facial, leg, foot, arm, abdominal and ,genitalia)
- Decreased urination,
- Ascites and pleural effusion.
- Anorexia and Loss of appetite
- Easy bleeding , Muscle weakness
- Blood pressure is normal or elevated.
- Weight gain.
- Symptoms of severe nephrotic syndrome include shortness of breath and confusion

Diagnosis:

- Serum albumin levels: Usually decreased.
- Total serum protein: Usually decreased (proteinuria).
- Urinalysis Usually contains excessive protein.
- Increase in the level of cholesterol in the blood (hyperlipidemia).

Therapeutic management

- Bed rest.
- Antibacterial therapy if an acute infection develops.
- Diuretics are ordered.
- Corticosteroid.
- The diet should be well balanced, complete and high protein to compensate for the constant loss of protein in the urine.
- Peritoneal drainage.
- Fluid intake should vary with the urine volume and the child's capacity to concentrate urine.

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Complications

- Complications of nephrotic syndrome may include:
- Edema
- Heart failure
- Urinary tract infection
- Malnutrition
- Pneumonia
- Kidney failure
- End stage renal disease
- Renal vein thrombosis

Nursing care of urinary tract disorders:

Assessment:

- Observe for edema when performing the physical examination of the child.
- Weight the child and record the abdominal measurements to serve as a baseline.
- Measuring vital signs, including blood pressure.
- Note any swelling about the eyes or the ankles.
- Careful monitoring of laboratory results and evaluating the child's edematous condition.
- Intake and output is monitoring.
- Examine the scrotal area of the male child for swelling, redness and irritation.

Nursing diagnosis:

- Excess fluid volume related to fluid accumulation in tissues.
- Risk for imbalanced nutrition: less than body requirements related to anorexia.
- Risk for impaired skin integrity related to edema.
- Fatigue related to edema and disease process.
- Risk for infection related to immune suppression.
- Deficient knowledge of the caregiver related to disease process, treatment and home care.

Planning and implementation:

Monitoring fluid intake and output

- Accurate intake and output measured and recorded.
- An accurate daily weight.
- Abdominal girth taken at the level of the umbilicus, the abdomen enlarged with ascites (edema in the peritoneal cavity).
- Testing urine for specific gravity and albumin and recorded vital signs.

Improving nutritional intake:

- The child's appetite is poor for several reasons:
 - The ascites diminishes the appetite because of the full feeling in the abdomen.
 - The child may be lethargic, apathetic and simply not interested in eating.
 - No added-salt diet may be unappealing to the child.
 - Corticosteroid therapy decreases the appetite.
- Make meals as attractive as possible and smaller protein should be more frequently.
 - Food is not salted, enough salt can be allowed to make the food more palatable,
 - Encourage the child to drink.

Promoting skin integrity

- The child's skin is stretched with edema and becomes thin and fragile. Inspect all skin surfaces regularly for breakdown.
- Because the child is lethargic, turn and position the child every 2 hours.
- Careful attention of touching skin surface is essential.
- If the scrotum is edematous, use a soft cotton support to provide comfort.
- Protect overlapping skin surfaces from rubbing by careful placement of cotton gauze.
- Bath the child regularly.
- Supporting edematous areas with pillows may provide a measure of comfort.
- The child should be turned, positioned and gently massaged.

Promoting energy conservation:

- Bed rest.
- Plan quiet, age appropriate activities that interest the child.
- Most children love having someone read to them. Coloring books, dominoes, puzzles and some kinds of computer and broad games are quiet activities that many children enjoy.
- Involve the family in providing some of these activities.
- Avoid using television excessively as a diversion.

Preventing infection:

- Protect the child from anyone with an infection: staff, family, visitors and other children.
- Hand washing and strict medical asepsis.
- Monitor vital signs every 4 hours and observe for any early signs of infection.

Providing family teaching and support:

- The child is discharged with complete instructions for management.
- Prepare a family for discharge at home through education and emotional support.
- Understand the disease process and how drug therapy and a low salt diet affect the child progress.

& Population

- Should tought to assess for fever and signs and symptoms of infections.
- Instruction for urine testing for protein.
- Bed rest.
- Activity is restricted only for edema; otherwise, normal activity is beneficial.

Evaluation:

The child's status is evaluated by assessing for signs of remission by:

- Urine specific gravity.
- Electrolyte levels within normal limits.
- Body weight.
- Reduced edema.
- Balance of intake and output.
- Lack of proteinuria, ascites, hypoproteinemia and hyperlipidema.
- Clear, pale yellow urine.
- Blood pressure within acceptable range.
- Intact skin without evidence of lesion.
- A well balanced diet
- No signs of infection.
- Usual response to stimuli.
- Ability to be mobile and coordinated.



Comparison of features of acute glomerulonephritis and nephritic syndrome

A <mark>ssessm</mark> ent factor	Acute glomerulonephritis	Nephritic syndrome
Cause	Immune reaction to group A β -	Idiopathic; possibly a hypersensitivity
	hemolytic streptococcal infection	reaction
On <mark>set</mark>	Abrupt	Insidious
H <mark>ematuria</mark>	Grossly bloody	Rare
P <mark>roteinuria</mark>	3+ or 4+ but not massive	Massive
E <mark>dema</mark>	Mild	Extreme
Hypertension	Marked	Mild
H <mark>yperlipidem</mark> ia	Rare or Mild	Marked
Peak age frequency	5-10 years	2-3 years
Interventions	limited activity; antihypertensive as needed; symptomatic therapy if congestive heart failure occurs	Bed rest during edema stage Corticosteroid Administration Possible cyclophosphamide administration
Diet	Normal for age; no added salt if child is hypertensive	nutritious for age; not added salt, small frequent meals may be desirable
Prevention	Prevention through treatment of group A β-hemolytic streptococcal infection	none known
Course	Acute: up to 2-3 weeks	Chronic: may have relapses

Chapter Eight Malnutrition Diseases of Children

Objectives

- Identify malnutrition and Precipitating factors:
- Describe the types of malnutrition
- Perform nursing intervention of child with marasmusand Kwashiorkor.
- Perform nursing intervention of child with Vitamin D Deficiency "Rickets

Definition of malnutrition:

The state of being the child is poorly nourished

Precipitating factors of malnutrition

- Lacks of foods (poverty)
- Inadequate breast feeding
- Wrong concepts about weaning
- Diarrhea and malabsorption
- Infections such as worms, measles, T.B

Types of malnutrition:

Protein-Energy Malnutrition

- Kwashiorkor (low protein)
 - Marasmus (low calories)

Micro-nutrient deficiency

- Iodine
- Iron
- Vitamin A
- Vitamin D

1- Kwashiorkor (Edematous Malnutrition)

- Kwashiorkor is a clinical syndrome, which result from a deficiency of protein with an adequate . supply of calories.
- A diet consisting mainly of starch grains provides adequate calories in the form of carbohydrates but an inadequate amount of high quality proteins.

Etiology:

- Kwashiorkor usually occurs in infancy.
- The maximal incidence is in the 2nd year of life •
- It following abrupt weaning.

Clinical manifestations (low protein):

- Decreased muscle mass (failure to gain weight)
- Swollen belly (edema and lipid build-up around the liver)
- Changes in skin pigment (pellagra); may lose pigment where the skin has peeled away • (desquamated) and the skin may darken
- Hair lightens and thins, or becomes reddish and brittle.
- Increased infections and diarrhea
- Apathy, lethargy, irritability
- Death does not occur from actual starvation but from secondary infection

Highest mortality – 50 to 60%

Usually present signs:

- MOON FACE
- HAIR CHANGES
- **SKIN DEPIGMENTATION**
- ANAEMIA

2-Marasmus:

- f Health & Populatio Marasmus involves inadequate intake of protein and calories.
 - Marasmus represents the end result of starvation where both proteins and calories are deficient.
- Marasmus represents an adaptive response to starvation, whereas kwashiorkor represents a maladaptive response to starvation.
- In Marasmus the body utilizes all fat stores before using muscles.

Etiology:

Seen most commonly in the first year of life due to lack of breast feeding and the use of dilute formula milk.



- Poverty and diarrhea are the usual precipitating factors
- Ignorance & poor maternal nutrition are also contributory

Clinical manifestations of marasmus:

- Severe wasting of muscle & s/c fats.
- Severe growth retardation.
- Child looks older than his age.
- No edema or hair changes.
- Alert but miserable.
- Hungry.

Degrees of Marasmus:

 1^{st} degree: loss of subcutaneous fat of the abdomen, weight loss of 15 – less than 25 % of expected weight.

 2^{nd} degree: loss of subcutaneous fat of the thighs and buttocks, weight loss of 25 - 35 % of expected weight.

3rd degree: loss of subcutaneous fat of the cheeks and chin giving the characteristics of monkey face appearance and weight loss of more than 35 % of expected weight.

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Nursing care of malnutrition:

- Give small amounts of foods limited in proteins, carbohydrates and fats
- Maintain body temperature
- Provide periods of rest and appropriate activity and stimulation
- Weight daily
- Change position frequently
- Protection from infected persons and injuries
- Nursing care for vomiting, diarrhea or dehydration
- Record intake and out put
- Skin care for child for edema or injuries
- Frequent assessment of growth and development
- Monitoring for any complications
- Nutritional counseling
- Health education about medications and follow up



3-Vitamin D Deficiency "Rickets"

Rickets is a deficient disease of growing children due to a lack of fat-soluble vitamin D

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Clinical Manifestation

Head:

- \checkmark large and square
- ✓ Late closing of anterior fontanel
- ✓ Craniotabes on pressure

Thorax and abdomen

- ✓ Pigeon chest
- \checkmark Rachitic rosary
- ✓ Dorsal kyphosis
- ✓ Relaxation of abdominal muscles leads to constipation

Extremities

Bowlegs or knock knees with flatfoot

Other clinical manifestation

- ✓ Dental deformities
- Bone pain impaired growth
- Increased bone fractures
- Muscle cramps

Treatment & Prevention

- Treatment by oral administration of large dose of vitamin D, generally 1500: 5000IU for about a month.
- Both breast-fed & bottle-fed infants should receive supplemental vitamin D in maintenance of 400 IU / Day

Role of the Nurse:

- e of the Nurse: 1. Handle gently and turned frequently. Heal
- 2. The diaper is applied loosely.
- 3. Put the child in correct position.
- 4. The child should exposed to sunshine before 11 am and after 3 pm for 10 minutes, increase frequently.
- 5. Give the child diet rich in vitamin D
- 6. Kept the child from putting their weight on legs or spinal column
- 7. Lie the child on firm mattress
- 8. Give health education to parents about the problem

Chapter Nine Nursing Care of Children with Congenital Anomalies

Objectives

- Describe the nursing intervention of common GIT congenital anomalies
- Describe the nursing intervention of common congenital anomalies of CNS
- Describe the nursing intervention of common orthopedic congenital anomalies
- Describe the nursing intervention of common congenital anomalies of the heart
- Describe the nursing intervention of common congenital abnormalities of the Genitourinary System
- Identify the preventive measures of congenital anomalies

Introduction:

- A "birth defect" is a health problem or physical change, present in a newborn at the time he/she is born. Birth defects may be very mild where the newborn looks and acts like any other newborn, or may be very severe. Some of the severe birth defects can be life threatening.
- Birth defects are also called "congenital anomalies" or "congenital abnormalities." The word
 "congenital" means "present at birth." The words "anomalies" and "abnormalities" mean that there
 is a problem present in a newborn.

1- Congenital anomalies of GIT

Cleft lip (CL) and/or cleft palate (CP)

Introduction: CL and CP are facial malformations that occur during embryonic development and they are the most common congenital deformity of the head. They may appear separately or more often, together.
Definition of cleft

Fissure or opening, it is the non-fusion (join) of the body nature structures that form before birth.

Definition of Cleft lip

- A cleft lip is a narrow opening along the upper lip that can extend all the way to the nostrils. The defect can be large or small, on one side of the face (unilateral) or both (bilateral).
- A cleft lip is a congenital fissure in the upper lip.
- •

Definition of Cleft palate

Is a split or opening in the roof of the mouth. A cleft palate can involve the hard palate (the bony front

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portion of the roof of the mouth), and/or the soft palate (the soft back portion of the roof of the mouth)

Incidence:

One in every 1000 births, 60% to 80% of children born with cleft lip and palate are male.

Etiology:

- Have mixed genetic and environmental causes.
- Environmental causes include maternal hypoxia due to maternal smoking, maternal alcohol abuse, maternal hypertension treatment, pesticide exposure, maternal exposure to lead and illegal drug (cocaine & heroin).

Diagnosis

Because cleft causes very obvious physical changes, a cleft lip or cleft palate is easy to diagnose. It can be detected through prenatal ultrasound or immediately after birth by a physical examination of the mouth, nose, and palate.

Therapeutic management: The management involves the cooperative efforts of a multidisciplinary health care team.

- Paediatrician
- Plastic surgery
- Speech/ language pathology

- Audiology(a specialist in communication disorders stemming from a hearing impairment); to assess and monitor hearing
- Nursing and social work

Management is directed toward:

- Surgical closure of the clefts (Closure of the lip defect precedes that of the palate, cleft lip repair usually performed during 3-6 months but cleft palate repair at 1 year).
- Prevention of complications.
- Facilitation of normal growth and development in the child.



Nursing care

A. Preoperative care

- Modify feeding techniques to adjust to defect.
- Hold child in upright position during the feeding.
- Use special feeding appliances (special, large, soft nipples with large holes).
- Burped frequently.

B- Postoperative care:

- Position on back or side (on abdomen for cleft palate).
- Restrain arms to prevent access to operative site.
- Avoid placing objects in the mouth following cleft palate repair (suction catheter, tongue depressor, and pacifier).
- Prevention vigorous crying to avoid strain on the repair.
- Encourage the parent to cuddle the infant as soon as feasible, participate in feedings under supervision.
- Use non-traumatic feeding techniques.

- For child with cleft lip surgery, Water is offered first, and formula feedings soon follow. The child may be fed by a small medicine cup or a rubber-tipped medicine dropper and graduated to a soft nipple when sucking is allowed and the infant should held in a sitting position, fed slowly and carefully burped
- The child with cleft palate surgery is usually fed from a cup or side of a spoon. The diet progresses from clear liquid to full liquid to soft food over a period of approximately 2 weeks.
- Cleanse suture line gently after feeding and as necessary in manner ordered by surgeon.
- Teach cleansing and restraining procedures, especially when infant will be discharged before suture removal.

2- Most common of Congenital Anomalies in CNS

Spine bifida

Spine bifida (Latin: "split spine") is a developmental congenital disorder caused by the incomplete closing of the embryonic neural. Some vertebrae overlying the spinal cord are not fully formed and remain infused and open. If the opening is large enough, this allows a portion of the spinal cord to protrude through the opening in the bones. There may or may not be a fluid-filled sac surrounding the spinal cord.

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Incidence

The incidence of spina bifida can be decreased by up to 75% when daily folic acid supplements are taken prior to conception.

Sig<mark>ns and symp</mark>toms

Children with spina bifida often have hydrocephalus, which consists of excessive accumulation of cerebrospinal fluid in the ventricles of the brain.

Types of Spina Bifida:

- Spine bifida occult.
- Meningocele.
- Myelomingocele.



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Prevention

- 1- There is no single cause of spina bifida or any known way to prevent it entirely. However, dietary supplementation with folic acid has been shown to be helpful in preventing spina bifida. Sources of folic acid include whole grains, fortified breakfast cereals, dried beans, leaf vegetables and fruits.
- 2- Recommended amount of folic acid for women of childbearing age and women planning to become pregnant is at least 0.4 mg/day of folic acid from at least three months before conception, and continued for the first 12 weeks of pregnancy.
- 3- Women who have already had a newborn with spina bifida or other type of neural tube defect, or are taking anticonvulsant medication should take a higher dose of 4–5 mg/day of folic acid..

Treatment

- There is no known cure for nerve damage due to spina bifida.
- During the operation for spina bifida cystic, the spinal cord and its nerve roots are put back inside the spine and covered with meninges.
- In addition, a shunt may be surgically installed to provide a continuous drain for the cerebrospinal fluid produced in the brain, as happens with hydrocephalus.
- Shunts most commonly drain into the abdomen. However, if spina bifida is detected during pregnancy, then open fetal surgery can be performed.

Nursing responsibilities towards congenital anomalies

The nurse can help the family by assuring them and explaining about importance of accurate diagnosis for appropriate management. Nursing personnel can provide following interventions for the management of the affected child.

- Collection of details history, especially history of prenatal, natal and postnatal period along with history of family illness.
- Preparation of pedigree chart by interview and home visit.
- Identification of present problems, its nature and severity, for necessary interventions.
- Participation in diagnostic investigations, treatment, follow-up.
- Provide necessary information to the parents and family members.
- Motivate the family members for genetic counseling and referring to the genetic clinic.
- Participating in genetic counseling process with special training, personal experience, knowledge and competency.
- Provide emotional support and answer questions asked by the counselee.
- Guide the family for rehabilitation of child and for available social and economic support through social welfare agencies.
- Promote public awareness about the prevention of congenital anomalies by individual or group health education or by mass media information.

Chapter Ten

Practical Part

Objectives

Apply different nursing interventions for children at different age group

Intramuscular injection (IM)

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An intramuscular injection is a technique used to deliver a medication deep into the muscles. The speed of absorption is faster for intramuscular injection compared to subcutaneous injection. This is because the muscle tissue has a greater blood supply than the area just under the skin. Muscle tissue may also hold a larger volume of medication than subcutaneous tissue.

Indications of Intramuscular injections:

Intramuscular injections are used when other types of delivery methods are not recommended. These include oral (swallowed into the stomach), intravenous(injected into the vein), and subcutaneous (injected just under the layer of skin).

Sites of IM injection in children

1- Infant and young child (less than 2 years of age)

For infants, the IM injection site (vastuslateralis muscle of thigh)is the front outer side of the thigh. Do not use the inner thigh or back of the thigh. Divide the thigh into thirds; the injection site is in the middle third section.

Υ'n,

2- Children (more than 2 years of age)

For children, the IM injection site (**Dorso gluteal muscle**)isthe upper outer quadrant of gluteal muscle. Do not use the inner or lower of gluteal muscle.



11.

3- Deltoid muscle

For children and adolescent, the IM injection site is the top and upper part of the arm.



The easiest and safest way to restrain a young child for a lateral thigh



Checklist for Intramuscular injection (IM)

Equipment required

- •
- IM medication ampoule 2.5 ml or 5 ml sterile syringe •
- Alcohol sponges Cotton wool swab •
- •
- Gloves •
- Paper bag •
- Kidney basin •
- Tray •

	Himan			
	Procedure	Compet	Incompete	Comment
	L'ALLUNAS L	ence	nce	
1. 2. 3. 4.	Check medication order accuracy. Wash your hands. Prepareinjection equipment. Prepareinjection away of the child's sight.			
A)	Prep <mark>are cor</mark> rect medication dose from ampoule.			
B)	 Clean the neck of an ampoule with alcohol. Hold the ampoule in one hand and protect the fingers on the other hand with alcohol cotton. Break off the stem of the ampoule., Insert the needle into opened ampoule, being careful not to touch the edges of the glass. Withdraw the medication from the ampoule by pulling back on the plunger of the syringe. Prepare correct medication dose from vial.	opula	101	
	 Clean the exposed rubber cap with an alcohol sponge. Remove needle cover. Insert the needle into the distilled water ampoule or from sterile saline bottle, and then take the amount needed for dissolvent. Inject the solution into the vial and shake vial well. Hold the inverted vial at the eye level Withdraw the medication from the vial by pulling back on the plunger of the suringe. 	10		
5. 6.	Cover the needle immediately with its protective sterile cover. Expel air from the syringe.			



7.	Place the syringe in tray.
8.	Bring the injection tray to the child's bedside.
9.	Explain to the parents or to the child and what you plan to do
	and keep the privacy.
10.	Select the proper site of the injection.
А.	Dorso gluteal muscle (the upper outer quadrant of gluteal
-	muscle) for children who have been walking.
В.	vastuslateralis muscle of thigh (the area below the great
	trochanter to above the femoral condyle or knee for infant and
	young child).
C.	Deltoid muscle, for children and adolescent.
11	Remove the infant's diaper or child's undernant" when injection
11.	if the lower part of the body"
12	Desition the shild according to the injection site and maintain
12.	firm restrain for him / her through the injection
12	Cleance the injection site therewebly and weit till dry
13.	Democra the needle cover
14.	Remove the needle cover.
15.	Compress the muscle mass for injection with other hand.
16.	Insert the needle perpendicular to area at 90 degree angle.
17	Fix the needle with left hand and pull the plunger back to insure
- / ,	that injection is away from blood vessels
18	Inject the medication slowly
19	Remove needle quickly
$\frac{1}{20}$	Wine are with alcohol sponge
20.	Move the limb or massage the site with alcohol sponge
$\frac{21}{22}$	If bleeding occurs apply pressure with dry cotton for few
22.	seconds
23	Cover the child and put him/her a comfort position
$\frac{23}{24}$	Don't recap the needle and discard it in a disposable needle box
27.25	Collect the equipment
$\frac{25}{26}$	Wash hands
20.27	Chart amount of medication given time of administration site of
27.	injection, any given complain and observation
	injection, any given complain and observation.

Nebulizer

Nebulization is the process of medication administration via inhalation. It utilizes a nebulizer which transports medications to the lungs by means of mist inhalation.

Indication

Nebulization therapy is used to deliver medications along the respiratory tract and is indicated to various respiratory problems and diseases such as:

- Bronchospasms
- Chest tightness
- Excessive and thick mucus secretions
- Respiratory congestions
- Pneumonia
- Atelectasis
- Asthma

Contraindications

In some cases, nebulization is restricted or avoided due to possible untoward results or rather decreased

effectiveness such as:

- Children with unstable and increased blood pressure
- Children with cardiac irritability (may result to dysrhythmias)
- Children with increased pulses
- Unconscious children (inhalation may be done via mask but the therapeutic effect may be significantly low)

Complications

Possible effects and reactions after nebulization therapy are as follows:

- Palpitations
- Tremors
- Tachycardia
- Headache
- Nausea
- Bronchospasms (too much ventilation may result or exacerbate bronchospasms)

Teaching

As nurses, it is important that we teach the patients the proper way of doing the therapy to facilitate effective results and prevent complications (demonstration is very useful). Emphasize compliance to therapy and to report untoward symptoms immediately for apposite intervention.

Checklist for Nebulizer

Equipment

- Nebulizer set and nebulizer connecting tubes
- Compressor oxygen tank
- Mouthpiece/mask
- Respiratory medication to be administered
- Normal saline solution.

Steps	Competent	Incompetent	Comment
1. Choose suitable time.			
2. Keep child Privacy.			
3. Prepare equipment and supply.	جمهورية		
4. Explain procedure to mother.			
5. Wash hands.			
6. Check doctor orders for medication,			
7. Put the child appropriately, allowing optimal			
ventilation (In semi-setting position).			
8. Assess and record breath sounds, respiratory			
status, pulse rate and other significant			
respiratory functions.			
9. Put the medication in the nebulizer while adding			
the amount of saline solution ordered.			
10. Attach the nebulizer to the compressed gas			
source.			
11. Attach the connecting tubes and mouthpiece to			
the nebulizer.			
12. Turn the machine on (notice the mist produced			
by the nebulizer).			
13. Offer the nebulizer to the child, offer assistance			
until he is able to perform proper inhalation (if			
unable to hold the nebulizer, replace the			
mouthpiece with mask).	- 000	U	
14. Stop the nebulizer session when half of the	h & 701		
medication is inhaled.			
15. Make percussion on the back of the child to			
expel secretion during rest from the set.			
16. Continue until medication is consumed.			
17. Give health teaching during procedure.			
18. Collect the equipment.			
19. Reassess child status from breath sounds,			
respiratory status, pulse rate and other			
significant respiratory functions needed.			
20. Compare and record significant changes and			
improvement.			
21. Attend to possible side effects and inhalation			
reactions.			
22. Wash hands.			

Cord Care

Rate the performance of each step or task observed using the following rating scale:

1- Need Improvement: step or task is performed incorrectly or out of sequence (if sequence necessary) or is omitted.

2- Competently performed: step or task is performed correctly and in proper sequence (if sequence necessary) but participant does not progress from step to step efficiently.

3- Proficiently performed: step or task is performed efficiently and precisely and in the proper sequence (if sequence necessary)

EARNING GUIDE FOR THE DIAPER CARE

(some of the following steps/ tasks should be performed simultaneously.)

SIEF/IASK		CASES		
Getting Ready				
1. Wash hands.				
2. Prepare the necessary equipment and supplies (60%-				
70% ethyl alcohol- cotton ball dry dressing if priscribed				
– disposable gloves).				
3. Explain procedures to the child's parents.				
During procedure				
1.Place the infant in supine position.				
2.Ware gloves.				
3.Observe cord for oozing. Bleeding, redness, foul odor,				
moisture or discarge.				
4. Clean the umblical stump with alcohol, cleansing must be				
done around the entire base of the cord.				
5. Clean the body of the cord.				
6. Clean around the umbilical cord.				
7. Clean the clamp.	10			
8. Keep the cord dry and expose it to air.				
"y of Health & PO				
After procedure			7	
1. Return and clean the reused equipment.				
2. Wash hand.				
3. Recording.				

Eye Care						
Rate the performance of each step or task observed using	the follow	ving rati	ing scal	e:		
1- Need Improvement: step or task is performed incorrectly or out of sequence (if sequence necessary) or is omitted.						
2- Competently performed : step or task is performed correctly and in proper sequence (if sequence necessary) but participant does not progress from step to step efficiently.						
3- Proficiently performed : step or task is perfor the proper sequence (if sequence necessary)	med effic	eiently a	nd prec	isely an	d in	
EARNING GUIDE FOR THE D	IAPER (CARE				
(Some of the following steps/ tasks	<mark>sho</mark> uld b	e perfoi	med sin	nultane	ously.)	
STEP/TASK			CASES			
جمهورية مصر العربية 🔪 Getting Ready						
4. Wash hands.						
5. Prepare the necessary equipment (prepare dr	y					
cotton balls, warm water or saline).						
This procedure is done to remove eye discharge, sooth ey	e					
or for instillation of eye drops or ointment.						
6. Explain procedures to the mother.						
During procedure						
9.Place the child or infant on his back on clean surfac or seated with head in clean backwards.	e					
10. Position the head is extended backwards.						
11. Position the light source to allow in maximum observation of the eye.	n					
12. Place disposable towel around the infant's neck.						
13. Moisten cotton swab in prescribed solution .						
14. Getting swab from the inner canthus to oute	r		5			
canthus of the eye using each swab only once.						
15. Dry infant's eyelids.						
After procedure		10				
4. Dispose equipment properly.	DOU	V.				
5. Wash hand thoroughly with soap and water and dry	1 ~ 1					
with clean dry cloth.						
3. Document eye care, time, type of solution used and your observation.		•				
4. Monitor and report abnormal findings.						
			1			

Gavage Feeding

Rate the performance of each step or task observed using the following rating scale:

1- Need Improvement: step or task is performed incorrectly or out of sequence (if sequence necessary) or is omitted.

2- Competently performed: step or task is performed correctly and in proper sequence (if sequence necessary) but participant does not progress from step to step efficiently.

3- Proficiently performed: step or task is performed efficiently and precisely and in the proper sequence (if sequence necessary)

Learning guide for the Gavage Feeding (Some of the following steps/ tasks should be performed simultaneously.)

STEP/TASK	CASES				
Getting Ready					
a-Wash hands					
b-Prepare the necessary equipments (tube, receptacle for					
the fluid ,sterile syringe to aspirate stomach					
content,stethoscope,clamp,non allergictap,gloves,towel					
and bib,pacifier if necessary, solution for feeding, water or					
water soluble lubricants					
c-Tell the mother what you are going to do ,encourage					
her to ask questions & listen to what she has to say					
During the procedure					
1-Place the child on the back or right side with head of					
the bed elevated, a small child can be held in a parents					
shoulder. Anorder child may sit up in the bed, restrain in					
necessary.					
2-Measure the tube for approximate length of insertion &					
mark the point with a small piece of tape. Two standard					
method of measuring are the following:-					
A-Measuring from the nose to the earlobe & then to the			\mathbf{A}		
end of the xiphoid process.					
B-Measuring from the nose to the earlobe & then to a					
point mid-way between the xiphoid process to umbilicus.		10			
3-Lubricate the catheter with sterile water or water	DAD	U .			
soluble lubricant.	FU T		_		
4-Insert the tube gently & firmly through either the					
mouth or one of the nares to the predetermined mark.					
• When using the nose, slip the tube along the base					
of the nose & direct straight back toward the occiput.					
• When entering throught the mouth , direct the tube					
toward the back of the thorat.					
5-If the child gasp ,cough.gags,or turns					
cyanotic, withdraw the tube & wait for the response					
subside before proceeding. If you encounter obstruction					
or the tube curls in the mouth, remove the tube & repeat					
this step.					
6-temporarily secure the tube with tape to stabilize it					
while yoy check the tube position	<u> </u>				
/-Check the placement of the tube:-					

• Attach the syringe to the feeding tube & apply negative pressure ,aspiration of stomach contents				
 Place stethoscope over the epigastria region & inject 2 cm air through N.G.T with syringe .While listening for the sound of gurgling through the stethoscope & remove the air. 				
• Insert the N.G.T in a glass of water if bubbles appear then the tube is not in the stomach.	h			
8-Tape the tube securely				
9-Prepare the formula into the container				
10-Check the temperature of the food ,it should be in room temperature				
11-Recnnect the syringe to the tube.				
12-Fill the syringe with the right amount food.				
13-If necessary, push gently with the plunger to start flow of food, then remove the plunger & allow the food to flow by gravity.				
14-Continue adding food until the right amount has been fed, don't allow the syringe to become empty.				
15-When the food is at the bottom of the syringe ,add 1-2 teaspoons (5-10ml) of sterile water to rinse the tube. After the procedure				
1-Place the clamp on the tube after feeding & observe the patients carefully				
2-Hold, cuddle,& burp the child				
3-Dispose the equipments			\$	
4-Record:- type of feeding Amount 			0,	
 Vomiting if happened 	000	n.		
Reaction of the child Called Cal	rur			
5- Wash hands				
عبجة والم	3	Ð		·]

Daily Care of Incubator						
Rate the performance of each step or task observed using the	followin	g ratin	g scale:			
1- Need Improvement: step or task is performed incorrectly or out of sequence (if sequence necessary) or is omitted.						
2- Competently performed : step or task is performed correctly and in proper sequence (if sequence necessary) but participant does not progress from step to step efficiently.						
3- Proficiently performed : step or task is performed the proper sequence (if sequence necessary)	3- Proficiently performed: step or task is performed efficiently and precisely and in the proper sequence (if sequence necessary)					
LEARNING GUIDE FOR DAILYCARE (OF INC	UBAT	OR			
(Some of the following steps/ tasks should be perf	formed s	imulta	neously	·)		
STEP/TASK			CASES			
Getting Ready					1	
1. Wash hands.						
2. Gather necessary supplies (sponge- disinfectant-						
distilled water-bed sheet).						
During The Procedure						
16. Ware gloves.17. Replenish humidity tank up to the appropriate level with						
distilled water.						
18. Wipe the inside wall with disinfectant according to the hospital policy while changing sheet and having neonate in the scale.						
19. Wipe the outside wall every 8 hours with disinfectant.						
20. Wipe the plastic cover of the mattress with disinfectant.						
21. Change the bed sheet.						
22. Monitor oxygen flow rate and concentration as prescribed.			2			
23. Check that temperature is between is 28-32C°.		N(O				
24. Check that humidity between is 55-65%.						
25. Replace the incubator every 7 hours (date of replacement should be indicated clearly on the incubator).	opu		•			
After The Procedure			5			
1. Place the solid sheet in covered linen hampers.						
2. Remove the gloves.						
3. Wash hands.						

Checklist of Stoma Care (Colostomy Care)

	Nursing action	First trial	Second trial	Third trial	Comment				
1	Wash hands.								
2	Explain Procedures.	\langle							
3	Prepare all necessary equipment.								
4	Keep child's privacy and choose suitable time.	111							
5	Check colostomy site and wash hands.								
6	Place discard container and place mackintosh and towel	11 11 1							
-	under the child.								
1	Wear disposable gloves to remove soiled dressing if no								
0	colostomy bag is used.								
8	Assess the stoma output for volume consistency and odor								
	(changes in stool formation are common with a new								
9	Gently wash the skin with warm water and mild soan								
	Genty wash the skin with wath water and nine soap.								
10	Assess the stome surrounding skin by gauze and when								
10	become clean repeat with gauze with water (stoma color								
	should be deep pink to cherry red).								
11	Wipe the per stoma skin with mild soap and water and								
	dry it then put smoothing cream (The skin must be dry								
	before applying cream to prevent inflammation and								
	contamination).								
	-If bag is used:-								
12	Measure the circumference of the stoma and choose								
	appropriate bag.								
13	Fix bag on skin applying firm pressure tight on stick bag								
1.4	to prevent leakage.								
14	-If hag is used:-								
	Applying a cloth over the stoma and secure it with tape.								
15	Keep patient dry and comfortable and remove all used			Δ					
	equipment.								
16	Wash hands and document condition of surrounding skin								
	(color, shape, size of stoma and amount of drainage).								
17	Reassure child and parents.	-							
	or Health 8	, 20							

Checklist for Gastrostomy Feeding

Objectives

- To maintain growth and development.
- To supply child with daily nutritional requirement when oral feeding is impossible.
- To provide comfort.
- To prevent weight loss.

Equipment:

- * A tray with
- 3 solution bowls (one for formula- one for distal water or saline & one for residual)
- 2 syringes (one for giving formula & the other for aspiration).
- 1 clamp
- Piece of cotton for regurgitation.

	Procedure	1	2	3	Remark
1	Explain the procedure to the mother				
2	Prepare equipment.				
3	Keep the patient privacy.				
4	Choose suitable time.				
5	Wash your hands.				
6	Place the child in semi-setting position.				
7	For infant less than one year give a sterile pacifier to suck				
	while the milk is running into the stomach through				
	gastrostomy tube.				
8	Attach syringe to the gastrostomy tube and aspirate the				
	residual amount (rested in the stomach from the last formula				
	or gastric secretion) and check it (related to the color,				
	amount, and congested or not), then leave these syringe until				
	the Dr. come to See it, if it is abnormal.				
-	If the feeding refrigerated, warm it to room temperature.				
	Do not allow bottom of the syringe higher than the child's				
-	chin 10-12cm.				
	Do not allow the syringe to become empty.				
-					
9	Attach another syringe to the gastrostomy tube after				
	removing the plunger away from the piston and use the				
	clamp to close the tube till poring the milk to prevent the air	10			
	to enter.				
10	Full the syringe with formula then removes the clamp.				
11	A gently push the plunger of the syringe necessary to start				
	the flow formula then remove the plunger and allow formula				
	to flow by gravity.				
12	After finishing half the amount of formula, infant should be				
	healed in the nurse's arm to make eructation (gently on his				
	back downward to upward to upward) and wipe the				
	regurgitated amount if needed.				
13	Continue adding formula to the syringe until you have				
	finished the measured amount.				
14	If the tube is to be clamped, in still enough water or saline to				
	clear tubing 1-3cm, (depending on the length of the tube, and				
	the age of the child).				
15	Clamp before all water leave syringe.				
16	After the flush of water has infused, open the regulator				
	clamp on the bag completely and allow the empty feeding				
	bag to remain attached to the gastrostomy. This will vent the				

	stomach, allowing built-up gas to escape. Vent the stomach
	for 15 minutes; then disconnect the feeding bag, rinse the
	bag with water, and clamp or close the gastrostomy.
17	Infant should be held again to make eructation after feeding,
	(that means eructation should be done two times in between
	feeding and after it).
18	Gentle pull the tube to allow the balloon to rest against the
	inside of the stomach at the opening
`19	If the child vomits or has abdominal disorder, suspend the
	feedings and notify a surgical team.
20	Keep the child in comfortable position (semi-setting position
	or on left side).
21	Remove all equipment and wash your hands.
22	Record the procedure including: Amount of residual
	aspiration, Amount of feeding, How child tolerated feeding,
	Any abdominal distention & Activity after feeding.

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Diaper Care							
Rate the performance of each step or task observed using the	followi	ng ratin	g scale:				
1- Need Improvement: step or task is performed in sequence necessary) or is omitted.	1- Need Improvement: step or task is performed incorrectly or out of sequence (if sequence necessary) or is omitted.						
2- Competently performed: step or task is performed correctly and in proper sequence (if sequence necessary) but participant does not progress from step to step efficiently.							
3- Proficiently performed : step or task is performed efficiently and precisely and in the proper sequence (if sequence necessary)							
EARNING GUIDE FOR THE DIA	PER C	ARE					
(Some of the following steps/ tasks should be per	rformed	simulta	aneously	y)			
STEP/TASK			CASES				
Getting Ready		1		1	1		
a. Clean diaper							
b. Receptacle for soiled diaper.							
c. Medication if prescribed (Zinc-oxide cream).							
d. Cotton pieces and balls.							
e. Warm water.							
During procedure							
2 <mark>6. Wash</mark> hands.							
27. Place the infant on bed or safe area.							
28 Position the infant in supine position							
29. Insecure the adhesive of the diaper							
30 Wear disposable gloves							
31 Remove the unclean diaper out from the incubator							
32 Clean the public using cotton with warm water							
33. Clean the groins from front to back using cotton with warm water.							
34. Clean the genitalia and buttocks using cotton with warm water from front to back.			0				
In female genital: 35. Wash genitalia with cotton ball from front to back.		131					
36. Separate the labia and clean the folds with cotton ball from front to back.	90						
37. Using each cotton ball for one using only.							
In male genital:							
 Retract the foreskin of the penis and cleanse around the urethral opening then replace retracted foreskin. 							
39. Wash the anus between genital folds and buttocks.							
40. Dry the skin well.							
41. Apply an ointment as (Zinc-oxide cream).							
	1	Î	1	1	1		

42. Apply a clean diaper and secure it.			
After procedure			
43. Dispose equipment properly.			
44. Document the following:			
Time of procedure.			
\succ Observation for any sign of inflammation and			
signature.			
> The amount and frequency of urination and			
defecation on fluid balance chart if needed.			
> Notification of the physician for any abnormalities			
and recommended action.			
<u>N.B.</u>			
Soiled diaper should not be placed on the floor or on the			
incubator.			

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Case Study

Outlines for selection of infant or child for study:

A- An infant or child in whom you are interested.
B- One who illustrates principles and techniques of nursing care not necessarily diagnostic problem?
C- One who illustrates the relationship between social factors and problems of nursing care?
D- One who illustrates the difference between a well-child and an ill child as direct result of illness?
Applications of pursing process in child case study
Aggagement
Assessment
A- History: Gather information by interview and reading records.
Age
Sex.
Present diagnosis
Condition
Brief clinical picture of disease compared to this child:
··· ······ ···························
·
Findings of physical examination and laboratory data.
Treatment prescribed:
•••••••••••••••••••••••••••••••••••••••
•••••••••••••••••••••••••••••••••••••••

Medication:

Surgery:	
Diet:	
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Fluids:

															••••				
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Ch	ild	lhood	dise	ease an	d in	nmu	 niz	atior	ns:	•••••	••••		••••		••••	•••••	•••••		•
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Exercise prescribed:

Exercise prescribed:	
B- Nursing Assessment Observation	
1- Physical and physiological Height	
Weight Vital signs	
Nutritional state, appearance.	

Feeding	
Elimination	•••
Intake and output :	
Fontanel sutures:	
	جمهورية مصر العربية
Eyes vision:	
Nose throat:	
Mouth, teeth:	
Respiratory system:	Of Hoolth & POPUL
	er riealtin or e
Circulation	76520

Abdomen:

••••••	
••••••	•••••
••••••	~~~
Genitalia:	See.
••••••	••••••••••••••••••••••••••••••
Skeletal system:	
	جمهورية مصر العربية 💦
Muscle tone reflexes movement:	
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····· <mark>······ ·</mark> ······	
Sle <mark>eping ha</mark> bits:	
Congenital abnormalities:	
	Of Hankle POV
2- Emotional	a rieditil or i
Number of children in family.	
	y alse as

tion

Position of child in family:	
•••••••••••••••••••••••••••••••••••••••	·····
Reaction to illness, hospitalization	on, separation:
••••••	
Security	
Self-esteem:	
Need for love:	
	Z Of Health & YOY
Describe line and control:	
Attitude toward parents, adu	ilts:

Relationship with other children:	
Play interests:	
-	
••••••	
Mental development	
ommunication, language, speech.	
	_ جمهوریه مصر العربیه _
Educational level	
earning environment achievement.	
- <u>s</u> /h/	
ttitude toward school, teachers.	OT Health & YUY
	ricalul
Socioeconomic	
Religious	
3	

Evaluation

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Reaction of parents to hospitalization, illness
جمهورية مضر العربية
Factors of home environment.
Recreation.
Mother/Family understanding of disease, condition.
V OF LISSING POPUL
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Mother/Family understanding of disease prevention and health maintenance:

C-Compare the normally expected physical, emotional, mental developmental level of an infant or child of this age with the infant or child of your study

## D- Compare the disease of your child with these from the text book

#### **II.** Planning and implementation

- Review the assessment and list the needs or problems in order of their importance.
- A need or problem may be any proven diagnosis, sign, symptoms, allergy, abnormal finding, operation, health risk factor, psychological problem, social problem.
- Designate the exact nursing actions you plan to meet the needs or solve the problems.
- Describe the goal or patient response expected as a result of the action.





#### Health Education

Describe the nursing actions, procedures and care given according to your problem / need list and plan of action.

Describe the health education provide health teaching to child and parents

Describe the provision made for future care or continuity of care of infant or child includes community resources available.

#### **III. Evaluation**

Describe the outcome of your actions according to the expected out comes.

**Goals** 

- Did you achieve your nursing goals for the patient?

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- List recommendations for any changes or additions in the nursing care.

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**Future care of the child** 

Describe your own feeling in regard to caring for this child.

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### **Book Coordinator: Mostafa Fathallah**

**General Directorate of Technical Education for Health** 

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