Children with Special Needs

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Introduction

The term special needs is most often associated with disabilities. Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives.

Disability

Disability is the consequence of an impairment that may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these.(WHO,2012)

Type of childhood disabilities and other special needs according to center for the improvement of child caring

→ Autistic disorder
→ Attention –Deficit \Hyperactivity disorder (AD\HD)
→ Cerebral palsy
→ Deafness \Hearing loss
→ Down syndrome
→ Emotional Disturbance
→ Epilepsy
→ Learning Disabilities
→ Mental retardation
→ Reading and learning disabilities (Briefing Paper)
→ Severe and \or Multiple Disabilities
→ Speech and Language Impairment
→ Spina Bifida
→ Traumatic Brain Injury
→ Visual Impairment

Causes of Disability among children

There can be many reasons for the disabilities amongst the children. There are many factors or situations before or after birth which can lead to the abnormalities and disabilities in the children.

(i) Before birth

If the mother gets infection or disease, the baby is also badly affected. During pregnancy if the mother suffers from any kind of nutritional deficiency, it can also lead to deficiency in the baby. As a result, the baby can be physically or mentally deficient.

(ii) At the time of birth

During the process of delivery sometimes many factors can lead to bad effect on the child. Difficulty in delivery can cause temporary stoppage of oxygen supply to the brain of the baby. It damages nervous tissues of the brain or spinal cord and this effect is permanent. This can cause mental deficiency in the baby. Sometimes the baby becomes physically handicapped.

When the doctors take help of various equipments during the delivery, for example, in forceps delivery, the 'brain' or 'nerve' is pressed by the forceps. If the doctor or nurse is not very well trained, they can cause damage to the baby.

As a result, the part of body with which the pressed or damaged 'nerve' can be related to is permanently damages. It is always advisable that delivery should be done at a nursing home or hospital under the guidance of the doctor or trained nurses. So any emergency during delivery can be tackled properly.

(iii) After birth

If proper care of the child is not done after birth then the baby may also develop disability, e.g., if the eyes of the baby are not washed with 1% nitrate solution there are chances of his getting blind.

(iv) Malnutrition

If the child doesn't get proper nutrition, he gets physically weak. Deficiency of calcium leads to malformation of bones; deficiency of iodine leads to deficiency of thyroxine hormone which upsets the process of growth of the body.

Deficiency of vitamin 'A' can cause blindness in the children. Protein and energy malnutrition causes 'Sukha Rog' which causes physical and mental deficiency.

(v) Accident

Due to any accident the child can become disabled, e.g., road accident can cripple a child and he can get blind, deaf and dumb. Sometimes wrong medication can also cause such effects that may make the child permanently disabled.

(vi) Hereditary factors

Sometimes children receive genes of disabilities or deficiencies from their parents. The child can be blind or deaf or dumb or mentally retarded by birth.

(vii) Infectious diseases

If the child gets infectious diseases the immunity power of the child gets diminished. He becomes susceptible to various diseases. If the child is not properly immunised he becomes susceptible to infectious diseases like 'mumps' which can cause hearing impaired or 'polio' which can cripple the child.

(viii) Effect of endocrine glands

Due to the disturbance in endocrine glands a child may suffer from various physical and mental deficiency. If thyroid gland is not working properly, then it can create many problems.

General Guiding Principles:

1. Ideally children should be with other children who have similar needs and not in adult wards unless necessary.
2. Accommodation should be offered to all parents and they should be helped and encouraged to stay.
3. A child's dignity and rights must be respected at all times while acknowledging a child's special needs he or she should always be accorded a sense of privacy and dignity.
4. Children may range from very young children to teenagers and young adults. It is important to recognize this and treat each in a manner appropriate to their age.

5. Children with special needs must have the right to refuse, and be protected from medical treatment. Medical treatment which is the primary purpose of it is research, information or education rather than therapy should disappear.
6. By creating an especially safe and healthy environment to give children with special needs the extra protection they require.
7. Ensure that every child with special needs – and their family – is treated equally and without unfairness with regard to their culture, faith, lifestyle and social or marital status.
8. Ensure that long-term conditions do not mask other problems.
9. Confidential and sensitive information must be respected.
10. Never presume that parent know a child's needs and routines so well that parent can anticipate what their daily needs will be. For many children, every day has the potential to be quite different.

Communicating with **CSHCN (children with special health care need) "DOs and DON'Ts" (2000):**

DO	DON"T
▪ Look at me when you talk to me**.** ▪ Use normal gestures and facial expressions. ▪ Talk to me frequently. ▪ Give me time to respond. ▪ Offer me choices whenever you can. ▪ Encourage me to chat. ▪ Observe my gestures and facial expressions. ▪ Please listen and watch: I'm trying hard to make myself understood. ▪ Speak normally. ▪ Try to ask questions that encourage me to give more than yes-or-no answers. ▪ Check you understand what I'm saying: ask. ▪ Remember my device is my voice. ▪ Face me when you talk to me. ▪ Talk to me at eye level . ▪ Do ask if I have finished.	▪ Shout or raise your voice ▪ Stare at me ▪ Pat my head ▪ Patronize me ▪ Make unrealistic demands ▪ Anticipate the end off my sentences unless I ask you to ▪ Stand behind me when I am trying to communicates. ▪ Read the display of my electronic device unless I ask or give permission. ▪ Ask and answer your own questions without waiting for my response. ▪ Ignore me. ▪ Touch my device unless I ask or give permission. ▪ Stand too close to me. ▪ Switch my device off. ▪ Lean on my device. ▪ Remove my device without my permission**.**

Autism

It is a neurological disorders that affect a child's ability to communicate, understand language, play, and relate to others (American Psychiatric Association ,2013)

Autism is a cognitive disorder that affects the developmental or learning ability of an individual. The manifestations of the disorder usually appear as early as the first three years of life. As a result of the neurological disorder, it disrupts the normal functioning of the brain affecting the development of the communication skills and social interaction skills of the person. Difficulties in verbal and non-verbal communication, leisure activities, and social interaction are seen in both children and adults with the disorder. According to the National Institute of Mental Health (NIMH) and the Center of Disease Control and Prevention (CDC), some form of autism affects 2-6 of every 1,000 children.

Characteristics of Autism

Autism disorder is affects a child's ability to communicate, understand language, play, and relate to others and all of the following characteristics, which can vary from mild to severe:

- Communication problems (for example for the use or comprehension of language).
- Difficulty relating to people, things, and events.
- Playing with toys and objects in unusual ways.
- Difficulty adjusting to changes in routine or to familiar surroundings.
- Repetitive body movement or behaviors.

Causes of Autism

The actual cause of autism is still unknown. However, following are some of the known causes of autism:

- Structural or functional damage of central nervous system
- Genetic conditions

- Abnormal development of brain
- Rett syndrome
- Biochemical defects
- Seizure
- Landau kleffner syndrome

Symptoms of Autism

Symptoms of autism typically appear before a child is 3 years old and last throughout life. Children with autism can display a wide range of symptoms, which can vary in severity from mild to disabling. General symptoms that may be present to some degree in a child with autism include:

- Difficulty with verbal communication, including problems using and understanding language
- Inability to participate in a conversation, even when the child has the ability to speak
- Difficulty with non-verbal communication, such as gestures and facial expressions
- Difficulty with social interaction, including relating to people and to his or her surroundings
- Difficulty making friends and preferring to play alone
- Unusual ways of playing with toys and other objects, such as only lining them up a certain way
- Difficulty adjusting to changes in routine or familiar surroundings, or an unreasonable insistence on following routines in detail
- Repetitive body movements, or patterns of behavior, such as hand flapping, spinning, and head banging
- Preoccupation with unusual objects or parts of objects

People with a form of autism, called autistic savantism, have exceptional skills in specific areas such as music, art, and numbers. People with this form of autism are able to perform these skills without lessons or practice.

Autism Treatment

There currently is no cure for autism, but treatment may allow for relatively normal development in the child and reduce undesirable behaviors. Children with

autism generally benefit most from a highly structured environment and the use of routines. Treatment for autism may include a combination of the following:

- **Special education:** Education is structured to meet the child's unique educational needs.
- **Behavior modification:** This includes strategies for supporting positive behavior and decreasing problem behaviors.
- **Speech, physical, or occupational therapy:** These therapies are designed to increase the child's functional abilities.
- **Social skills therapies :** These therapies address language and social pragmatics in those verbal individuals with autism.
- **Medication:** There are no medications currently approved to treat autism, but medications may be used to treat certain symptoms, such as anxiety, hyperactivity, sleep disturbance, and other behaviors that may lead to injury

Prevention of Autism

There is no known way to prevent or cure autism. However, early diagnosis and intervention is critical and may help to maximize a child's ability to speak, learn, and function. It is very important that all children see a pediatrician regularly so that any signs of autism can be detected early.

The Council on Children with Disabilities (2007)

- Medical home is center for ongoing management
- Cornerstone of treatment
- Educational interventions, developmental and behavioral strategies
- Early, intensive intervention is vital
- Pediatricians can support families by providing information and access to resources

Nursing Intervention for Autism

- Education
- Support
- Intervention related to treat the symptoms medication

Research (Cell Therapy Center EmCell)**:**

- Stem cell therapy for autism

Stem cell therapy is effective approach to treating autism and is based on the unique ability of stem cells to influence metabolism, immune system and restore damaged cells and tissues.

Autism treatment positively affect all body organs and systems, and, first of all, this treatment targets the brain. In autism, areas of brain regulating memory, concentration, attention, speech etc. are damaged. Stem cell treatment improves blood and oxygen flow to the brain (improved perfusion), replaces damaged neurons and stimulates formation of the new arteries (Cell Therapy Center EmCell).

Attention –Deficit \Hyperactivity disorder (AD\HD)

- ADHD is a problem with inattentiveness, over-activity, impulsivity or a combination.
- It is a condition that can make it hard for a person to sit still, control behavior, and pay attention.
- These difficulties usually begin before the person is 7 years old.

According to the National Institute of Mental Health (NIMH), between 3 and 7 percent of children in the United States have ADHD. This group would include about 2 million children as of 2008. Worldwide, the rate of ADHD in children is thought to be somewhere between 8 and 12 percent. Boys are three to five times more likely than girls to be diagnosed with ADHD. The inattentiveness subtype is more common in girls than in boys, however. As far as is known, ADHD is equally common in all racial and ethnic groups in the United States. In adults, the gender ratio is virtually equal. The rate of ADHD in American adults is thought to be between 2 and 7 percent.

Type of ADHD :

1) ADHD, Predominantly Inattentive Type: Inattention, but not enough (at least 6 out of 9) hyperactivity-impulsivity symptoms
2) ADHD, Predominantly Hyperactive-Impulsive Type: Hyperactivity-impulsivity, but not enough (at least 6 out of 9) inattention symptoms
3) ADHD, Combined Type: Both inattention and hyperactivity-impulsivity symptoms

Symptoms:

❖ Inattention symptoms

1) Fails to give close attention to details or makes careless mistakes in schoolwork.
2) Has difficulty sustain attention in tasks or play.
3) Does not seem to listen when spoken to directly.
4) does not follow direction and fails to comlete school work ,chort ,or in adolecent ,on the job duties
5) Has difficulty organizing tasks and activities
6) Avoids or dislikes tasks that require sustained mental effort (such as school work) .
7) Often loses toys, assignments, pencils, books, or tools needed for tasks or activities.
8) It is easily distracted .
9) often forgetful in daily activites

❖ **Hyperactivities symptoms;**

1) Fidgets with hands or feet squirms in seat .
2) Leaves seat when remaining seated is expected.
3) Runs about or climbs in inappropriate situations.
4) Has difficulty playing quietly.
5) Always on the go , act s as if driven by a motor , talks excessively.
6) often talks excessively
7) in adolecence ,may exhibit feeling of restlessness

❖ **Impulsivity symptoms :**

1) Blurts out answers before question have been completed.
2) Has difficulty waiting turn.

3) Interrupts or intrudes on others (put into conversations or games).

Wahts wrong with ADHD children ?

- ❖ research suggest that is a chemical imbalances affecting the nurotransmitters ,dopamine norepineprine and serotonin
- ❖ an imperfection in the brain that causes the consent motion and other intolerable behavioral poblem in ADHD

Diagnosis

It is based on very specific symptoms, which must be present in more than one setting**.**

- Children should have at least 6 attention symptoms or 6 hyperactivity \impulsivity symptoms, with some symptoms present before age 7.
- The symptoms must be present for at least 6 months seen in more setting ,and not caused by other problem.
- The symptoms must be severe enough to cause significant difficulties in many setting, including home, school, and in relationship with peers.
- physical examination
- parent rated child behavior scales
- teacher related child behavior scales
- parent and child interviows
- parent self report measures
- clinic based psycological test
- review of prior school and medical reports
- intelligence testing (IQ test) and educational achievement testing

Treatments

- The usual course of treatment may include medications such as methylphenidate (Ritalin Adderall, and Dexedrine.). which work by targeting the parts of the brain that produce dopamine.
- More recently, the Food and Drug Administration (FDA) approved the use of a non-stimulant medication called Strattera, which works on another brain chemical called norepinephrine.
- **N**orepinephrine is a hormone that affects a person's ability to pay attention and respond appropriately to stress. Although medications for ADHD generally work well, they do have side effects, such as sleep problems, weight loss, appetite loss, and nervousness.
- Most expert agree that treatment for ADHD should address multiple aspect of the individual's functioning and should not be limited to use of medication alone.
- Treatment should include structured classroom management, parent education (to address discipline and limit –setting), and tutoring and \or behavioral therapy for the child.
-

When to start treatment?(*nheduhealth.com/files/overview-of-adhd.ppt*)

→ Early identification and intervention is the best approach that helps to avoid or minimize the risks

→ Depending on the types and severity of the ADHD

→ Early intervention program for ADHD started as early as 3 years old.

What to expect in treatment of ADHD?

→ Pharmacotherapy

→ Behavior therapy/cognitive behavior therapy

→ Family therapy/guidance

- Home management
- Parenting and stress management

→ Classroom management

What kind of treatment?

→ Early intervention program (EIP)

→ Middle childhood intervention program (MCIP)

→ Adolescent intervention program (AIP)

→ Young Adult intervention program (YAIP)

Early intervention program

1. Preschool children with ADHD/HKD
2. Assessment
   → Types or severity of ADHD (CPRS, CTRS)
   → Co morbidity e.g. speech delay, autistic disorder, mental retardation, epilepsy
   → Temperament
   → Parental awareness and support
   → IQ or general mental ability (WISC, KBIT, DTLA)
   → Speech, social and personal development
   → Quick neurological screening test
   → Behavioral and emotional problem
   → Academic ability and placement (WRAT)
3. Rehabilitation
   → Sensory motor integration program
   → Speech therapy
4. Academic placement and support
   → Send them early (3-4 years old) to play school which has sensory motor developmental program and trained/empathic teacher
   → Special educational placement- private, NGO or public is recommended if the child has learning disability
   → Communicate with the school about the child's developmental problem and establish teacher support program
5. Home management – 8 steps to Better Behavior
   → Learn to pay positive attention to your child
   → Use your powerful attention to gain compliance
   → Give more effective commands
   → Teach your child not to interrupt your activities
   → Set up a home token system
   → Learn to punish misbehavior constructively
   → Expand your use of time out
   → Learn to manage your child in public places

Middle Childhood Intervention Program

1. Aims
   - → To improve attention, behavior, mood and learning
   - → To help develop further the child's neurological, sensory, motor, social and psychological maturity
   - → To provide parental guidance and family therapy
2. Treatment approaches
   - → Psychological therapies
     - Behavior/Cognitive behavior therapy
     - Focus therapy
     - Play therapy
     - Art therapy
     - Relaxation therapy
     - Anger management
     - Social group therapy
   - → Pharmacotherapy
     - Stimulant, non stimulant monitoring and maintenance
   - → Rehabilitation program
     - For child with delay maturity
   - → Academic placement and support
     - Consider special placement for children with moderate to severe learning disability
     - Assess the child's learning aptitude and provide support accordingly
     - Monitor the child academic progress and attainment
     - Psychological development reassessment yearly
     - Communicate with school about the child's need and behavioral strategies in learning

Adolescent Intervention Program

1. Aims
   1. To improve attention, behavior, mood and learning
   2. To help develop further the child's psychological and social maturity
   3. To provide parental guidance and family therapy

2. Assessment
    2. Co morbidity such as conduct disorder, substance abuse, mood disorder, adolescent-parent conflict and academic difficulties
    3. The adolescent's insight into her/his problem
    4. Parental awareness and support
3. Psychological therapies
    2. Individual psychotherapy
    3. Group therapy
    4. Anger management
    5. Relaxation therapy
    6. Family therapy/guidance
4. Pharmacotherapy
    2. Stimulants, non stimulants
    3. Monitoring, dose adjustment and maintenance
    4. Consider tailing dose if the child reach the maturity to cope on his/her own
5. Academic placement and support
    2. Monitoring of academic progress
    3. Reassess the child's psychological development and learning aptitude
    4. Assess the child potential for future vocation

<u>Young Adult Intervention Program</u>

1. Aims
    → To improve attention, behavior, mood and learning
    → To enhance the young adult's psychological, intellectual and social maturity
    → To guide them learn and cope effectively in their chosen vocation
    → To provide parental guidance and family therapy
    → To provide school guidance and/support
2. Assessment
3. Psychological therapies
4. Medications
5. Academic placement and support

Who can treat ADHD?

- Specialist with expertise in ADHD
  - Child and adolescent psychiatrist
  - Psychiatrist
  - Clinical psychologist
  - Effective Treatment of ADHD
- Multidiscipline
  - Medical
  - Psychological
  - Educational
  - Rehabilitation
  - Medical Treatment
- Medication is used to treat the symptoms and help the child with ADHD function more effectively
- Examples are
  - Ritalin, Stratera and Concerta
  - Documented Specific Beneficial Effects of Stimulants
- MOTOR EFFECTS
  - Reduce activity to the level of normal peers
  - Decrease excessive talking, noise and disruption in the classroom
  - Improve hand writing
  - Improve the fine motor coordination
- II. SOCIAL EFFECTS
  - Reduce anger
  - Reduce bossiness with peers
  - Reduce verbal and physical aggression with peers
  - Reduce defiance and oppositional behavior with adults
  - Decrease intensity of behavior
  - Improve peer social status
  - Improve ability to play and work independently
  - Improve mother-child and family interactions
- COGNITIVE EFFECTS
  - Improve sustained attention
  - Improve short term memory

- Reduce distractibility
- Reduce impulsivity
- Increase the amount of academic work completed
- Increase the accuracy of academic work

- THE TEAM
- Parents
- Family
- School officials
- Health care professionals

The American Academy of Pediatrics has guidelines for treating ADHD 2011.

- Set specific appropriate target goals to guide therapy.
- Start medication and behavior therapy.
- When treatment has not met the target, re-evaluate the original diagnosis, the possible presence of other conditions, and how well the treatment plan has been implemented.
- Follow –up regularly with doctor to check on goals ,result and side effects of medications .During theses check-ups ,information should be gathered from parents ,teachers and the child.
- Communicate regularly with the child's teacher.
- Keep consistent daily schedule, including regular times for homework, meals and outdoor activities. Make changes to the schedule in advance and not at least moment.
- Limit distraction in the child's environment.
- Make sure the child gets a healthy varied diet with plenty fiber and basic nutrients.
- Make sure the child gets enough sleep.
- Praise and reward good behavior.
- Provide clear and consistent rules for child.

Nursing care management :

- Explain to parent that children treated with both medications and behavior therapy have been found to do better than those treated with behavior therapy alone.

- Explain to parent that the medications prescribed for ADHD do not cure the disorder. The medications only help the child control the symptoms, and they must be taken every day.
- Explain to parent about behavior therapy, children with ADHD may receive social skills training and attend support groups.
- Encourage parenting skills training for the parents of children with ADHD and family therapy for the entire family.

Epilepsy

Epilepsy is a condition which affects the communication between the nerve cells of the nervous system when there is a sudden overactive electrical discharge in the brain. Epilepsy is a serious condition that affects millions of people across the globe (NANDA).

There are many epilepsy symptoms to look out for. The largest one is the occurrence of epileptic seizures, which can come in a number of forms. Epileptic seizures can feel like a moment of confusion, a sudden blackout, a sudden change in smells or tastes, involuntary jerking of the legs and arms, and a long, blank staring spell. Epileptic seizures are essentially long moments of abnormal brain activity caused by electric signals that you generate in brain. This disease can usually be treated with the proper implementation and prescription of treatment drugs and possibly even surgery. A seizure is a symptom of epilepsy, but not all seizures are caused by epilepsy.

According to CDC (2011) Epilepsy represents one of the most common chronic neurological disorders in the developing world .Worldwide ,it is estimated that about 10.5 million children under 15 years have active epilepsy .almost 2 million Americans live with epilepsy and nearly 140.000 people in the US develop this condition annually .

Caused of Epilepsy

- A drug
- A high fever
- A severe head injury
- Other disorders such diabetes, some heart conditions, and narcolepsy, among others.

- Sometimes people have a single seizure for which no cause can ever be found.

Treatment

Lucile Packard Children Hospital 2011 . Stanford university school of medicine

- Antiepileptic (also called anticonvulsant) drugs to control seizures.
- Surgery.
- Experimental Treatment.
- **Research :**
- **According to the centers for Disease control and prevention (CDC) 2011.**
- Epilepsy is condition in which disturbances to the brain's normal electrical activity cause recurring seizure or brief episode of altered consciousness.
- **Mortality rates increase 800% when epilepsy and autism occur together**
- A comprehensive investigation of brain tissue donated to the Autism Speaks Autism Tissue Program (ATP), a postmortem brain tissue donation program, determined that one-third of the brain donors with...
- http://www.news-medical.net/news/20110415/Mortality-rates-increase-80025-when-epilepsy-and-autism-occur-together.aspx | 15 Apr 2011

Nursing care Management

1. Clients can identify the precipitation of an attack and to minimize / avoid it creating a state that is safe for the client, avoid any physical njury, avoid falling
2. Identification of environmental factors that allow the risk of injury. Rational The stuff around the patient may be harmful during the seizure.
3. Monitor neurological status every 8 hours
4. Identify deviations of development or expected*:*
    - Keep objects that could cause injury to the patient during a seazure.
    - Place the patient in a low and flat ,Together with the patient in some time after the seizure.
    - Prepare a soft cloth to prevent biting the tongue occurs during seizures.

5. Ask the patient if there are unusual feelings experienced just before a seizure.To identify early manifestation before the occurrence of seizures in patients.

6. Provide anti-convulsive fit your doctor's advice to reduce prolonged seizure activity, which could reduce the supply of oxygen to the brain
7. Instruct patient to tell if there is something that does not feel comfortable, or experience something unusual for a start having seizures. For information on the nurses to take immediate action before the seizures continued.
8. Provide information to the family about what to do during the patient's seizures toInvolving families to reduce the risk of injury.

Cerebral Palsy

Cerebral Palsy is a group of disabilities caused by injury or insult to the brain either before or during birth, or in early infancy. **Cerebral Palsy** is the most common permanent disability of childhood.

Cerebral refers to the cerebrum, which is the affected area of the brain (although the disorder most likely involves connections between the cortex and other parts of the brain such as the cerebellum, and *palsy* refers to disorder of movement.

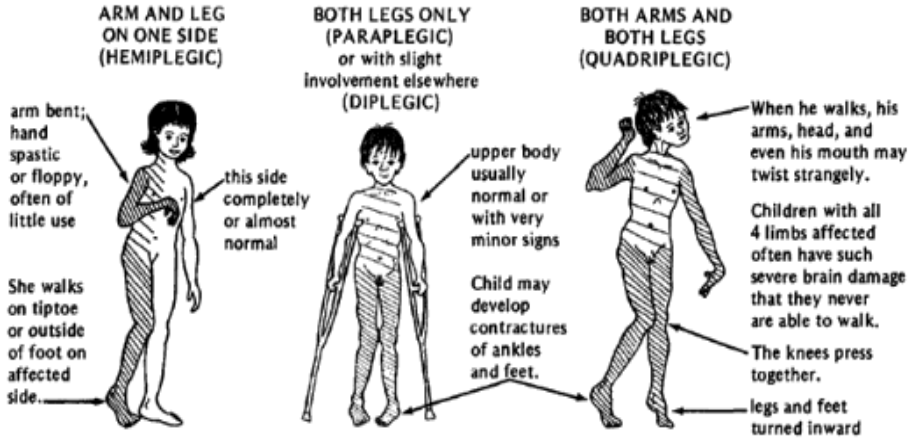
CP is caused by damage to the motor control centers of the developing brain and can occur during pregnancy (about 75 percent), during childbirth (about 5 percent) or after birth (about 15 percent) up to about age three.It is a **non-progressive disorder**, meaning the brain damage does not worsen, but secondary orthopedic difficulties are common. For example, onset of arthritis and osteoporosis can occur much sooner in adults with cerebral palsy.

1. There is no known cure for CP. Medical intervention is limited to the treatment and prevention of complications arising from CP's effects.

Classification of Cerebral Palsy:

1. Spastic Cerebral Palsy – is the most common type and may involve one or both sides of the body.

- Clinical hallmarks include hypertonicity with poor control of posture, balance, and coordinated movement, and impairment of fine and gross motor skills. Active attempts at motion increase the abnormal postures and lead to overflow of movement to other parts of the body.
- Common types of spastic cerebral palsy include:
- Hemiparesis is when one side of the body is affected
- Quadriparesis (tetraparesis) is when all four extremities are affected.
- Diplegia is when similar body parts are affected, such as both arms.



2. Dyskinetic/Athethoid Cerebral Palsy – involves abnormal involuntary movements that disappear during sleep and increase with stress.

- Major manifestations are athetosis (wormlike movement), dyskinetic movement of mouth, drooling and dysarthria.
- Movements may become choreoid (irregular, jerky) and dystonic (disordered muscle tone), especially when stressed and during the adolescent years.

3. Ataxic Cerebral Palsy – is manifested by a wide-based gait, rapid repetitive movements performed poorly, and disintegration of movements of the upper extremities when the child reaches for objects.

4. The Mixed/dystonic Cerebral Palsy – is manifested by a combination of the characteristics of spastic and athetoid CP.

Etiology:

- **Cerebral Palsy** common results from existing prenatal brain abnormalities.

- Prematurity is the single most important determinant of **Cerebral Palsy**.
- Other prenatal or perinatal risk factors include: asphyxia, ischemia, perinatal trauma, congenital and perinatal infections, and perinatal metabolic problems such as hyperbilirubinemia and hypoglycemia.
- Infection, trauma and tumors can cause **Cerebral Palsy** in early infancy.
- Some cases (about 24%) of **CP** remain unexplained.

Pathophysiology:

- Disabilities usually result from injury to the cerebellum, the basal ganglia or the motor cortex.
- It is difficult to establish the precise location of neurologic lesions because there is no typical pathologic picture. In some cases, the brain has gross malformations; in others, vascular occlusion, atrophy, loss of neurons and degeneration may be evident.
- **Cerebral Palsy** is nonprogressive but may become more apparent as the child grows older.

Clinical Manifestations:

The most common clinical manifestation in all types of **CP** is delayed gross motor development (delay in all motor accomplishments; delay becomes more profound as the child grows)

Additional manifestations include:

1. Abnormal motor performance (e.g. early dominant hand preference, abnormal and asymmetrical crawl, poor sucking, feeding problems or persistent tongue thrust)

2. Alterations of muscle tone (e.g. increased or decrease resistance to passive movements, child feels stiff when handling or dressing, difficulty in diapering or opisthotonos)

3. Abnormal postures (e.g. scissoring legs or persistent infantile posturing)

4. Reflex abnormalities (e.g. persistent primitive reflexes, such as tonic neck of hyperreflexia)

Disabilities associated with **Cerebral Palsy** include mental retardation, seizures, attention deficit disorder and sensory impairment.

Severe cases may be observed at birth, mild and moderate cases usually are not detected until the child is 1 to 2 years old. Failure to achieve milestones may be the first sign.

Diagnosis of Cerebral Palsy is based on the following:

- Prenatal, birth and postnatal history
- Neurologic examination
- Assessment of muscle tone, behavior and abilities
- Other disorders, such as metabolic disorders, degenerative disorders and early slow-growing brain tumors are ruled out.

Treatment :

- Cerebral Palsy can't be cured ,but treatment will improve a child's.
- Many children go on to enjoy near – normal adult lives if their disabilities are properly managed .
- Speech therapy.
- Drugs to control seizures.
- Relax muscles spasm.
- Alleviate pain.
- Surgery to correct anatomical abnormalities or release tight muscles .
- Braces and other orthotic devices.
- Wheelchairs and rolling walkers.
- Communicating aids such as computer with attached voice synthesizers.

Researches :

1) Repeat steroids to premature infants linked to cerebral palsy

Repeated courses of a drug that is used to improve the survival of unborn premature babies also may increase the risk of cerebral palsy in those children(NIH-sponsored Maternal-Fetal Medicine Network ,2007)

2) AAN guideline finds diazepam drug is effective for treating children with cerebral palsy.

A new guideline from the American Academy of Neurology and the Child Neurology Society finds botulinum toxin type A to be an effective treatment for spasticity, muscle(2010)

3) Botox injections to treat children with cerebral palsy

Botox injections are best known for reducing wrinkles on the face. However, experts at Loyola University Health System are finding new ways to use the injections in children with cerebral palsy (2004).

4) Botox helps children with cerebral palsy

Botox, or botulinum toxin, offers a new, non-surgical option for improving the upper extremity function of children with cerebral palsy (CP), report researchers from Wake Forest University Baptist. (2004)

5) Cerebral palsy risk doubles with IVF: Study

There is now evidence that rates of cerebral palsy are higher among children born via in vitro fertilization (IVF) (2010)

Nursing Management:

1. Prevent physical injury by providing the child with a safe environment, appropriate toys, and protective gear (helmet, kneepads) if needed.
2. Prevent physical deformity by ensuring correct use of prescribed braces and other devices and by performing ROM exercises.
3. Promote mobility by encouraging the child to perform age-and condition-appropriate motor activities.
4. Promote adequate fluid and nutritional intake.
5. Foster relaxation and general health by providing rest periods.
6. Administer prescribed medications which may include sedatives, muscle relaxants and anticonvulsants.
7. Encourage self-care by urging the child to participate in activities of daily living (ADLs) (e.g. using utensils and implements that are appropriate for the child's age and condition).
8. Facilitated communication
    - Talk to the child deliberately ad slowly, using pictures to reinforce speech when needed.

- Encourage early speech therapy to prevent poor or maladaptive communication habits.
- Provide means of articulate speech such as sign language or a picture board.
- Technology such as computer use may help children with severe articulation problems.

9. As necessary, seek referrals for corrective lenses and hearing devices to decrease sensory deprivation related to vision and hearing losses.
10. Help promote a positive self-image in the child:
    - Praise his accomplishments
    - Set realistic and attainable goals
    - Encourage and appealing physical appearance
    - Encourage his involvement with age and condition- appropriate peer group activities.
11. Promote optimal family functioning
    - Encourage family members to express anxieties, frustrations and concerns and to explore support networks.
    - Provide emotional support and help with problem solving as necessary.
    - Refer the family to support organizations such as the United Cerebral Palsy Association.
12. Prepare the child and family for procedures, treatments, appliances and surgeries if needed.
13. Assist in multidisciplinary therapeutic measures designed to establish locomotion, communication and self-help, gain optimal appearance and integration of motor functions; correct associated defects as effectively as possible and provide educational opportunities based on the individual's needs and capabilities.

    Therapeutic measures include:

    - Braces to help prevent or reduce deformities, increase energy of gait, and control alignment.
    - Motorized devices to permit self-propulsion.
    - Orthopedic surgery to correct deformities and decrease spasticity (medications are not helpful for spasticity).

- Medications to control possible seizure activity or attention deficit disorder.
- Speech therapy and physical therapy.

14. Inform parents but their child will need considerable help and patience in accomplishing each new task.
    - Encourage them not to focus solely on the child's inability to accomplish certain tasks.
    - Urge them to relax and demonstrate patience.
    - Explain the importance of providing positive feedback.
15. Encourage the family to seek appropriate functional, adaptive and vocational training for the child.
16. Encourage family members to achieve balance in their lives between caring for their disabled child and other family and personal matters.

Neurological disorders that appear in infancy or early childhood and permanently affect body movement and muscles coordination but don't worsen over time. Even though cerebral palsy affects muscles movement ,it isn't caused by problems in the muscles or nerves. It is caused by abnormalities in part of the brain that control muscle movements.

- The early signs of cerebral palsy usually appear before the child reaches 3 years of age.
- The most common are lack of muscles coordination when performing voluntary movements (ataxia) .
- Stiff or tight muscles and exaggerated reflexes (spasticity)
- Walking with one foot or leg dragging.
- Walking on the toes.
- A crouched gait ,or a scissored gait.

Mental Retardation "MR":

Mental Retardation is a part of a broad category of developmental disability; it is defined by the American Association of Mental Deficiency as significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period (18 years of age). Adaptive behaviors include communication, self-care, work, leisure, health, and safety.

Etiology:

A diagnosis of mental retardation cannot be made on the basis of intellectual ability alone; there must be both intellectual and adaptive (personal independence and social responsibility) impairment.

Causes of mental retardation are genetic, biochemical, viral, and developmental.

- Prenatal Infection and intoxication
- Trauma or physical agent (e.g. lack of oxygen)
- Metabolic Disturbance
- Inadequate Prenatal Nutrition
- Gross postnatal brain disease (e.g. Neurofibromatosis or tuberous sclerosis)
- Chromosomal abnormalities
- Prematurity
- Low birth weight
- Autism
- Environmental deprivation

Associated Factors Include:

- Maternal Lifestyle (e.g. Poor nutrition, smoking, and substance abuse)
- Chromosomal disorders (most related to Down Syndrome)
- Specific Disorders such as fetal alcohol syndrome
- Cerebral Palsy, microencephaly or infantile spasms

Pathophysiology:

The Pathophysiology of Mental Retardation depends on the cause; early diagnosis and prompt treatment may particularly important in cases involving an identifiable and possibly correctable cause such as phenylketonuria (PKU), malnutrition, or child abuse.

Diagnosis usually is made after a period of suspicion. Diagnosis may be made at birth from recognition of specific syndromes such as Down Syndrome. Diagnosis and classification are based on standard IQ test scores.

Clinical Manifestations:

Findings may vary depending on the classification or degree of retardation.

Classification	Manifestations		
	Preschool	**School-age**	**Adult**
Mild (50-70 IQ)	The child often is not noted as retarded, but is slow to walk, talk and feed self.	The child can acquire practical skills, and learn to read and do arithmetic to sixth grade level with special education classes. The child achieves a mental age of 8 to 12 years	The adult can usually achieve social and vocational skills. Occasional guidance may be needed. The adult may handle marriage, but not child rearing.
Moderate (35-55 IQ)	Noticeable delays, especially in speech are evident.	The child can learn simple communication, health, and safety habits, and simple manual skills. A mental age of 3 to 7 years is achieved.	The adult can perform simple tasks under sheltered conditions and can travel alone to familiar places. Help with self-maintenance is usually needed.
Severe (20-40 IQ)	The child exhibits marked motor delay and has little to no communication skills. The child may respond to training in elementary self-help, such as feeding.	The child usually walks with disability. Some understanding of speech and response is evident. The child can respond to habit training and has the mental age of a toddler.	The adult can conform to daily routines and repetitive activities, but needs constant direction and supervision in a protective environment.
Profound (below 20 IQ)	Gross retardation is evident. There is a capacity for function in sensorimotor areas, but the child needs total care.	There are obvious delays in all areas. The child shows basic emotional response and may respond to skillful training in the use of legs, hands and jaws. The child needs close supervision and has the mental age of a young infant.	The adult may walk but needs complete custodial care. The adult will have primitive speech. Regular physical activity is beneficial.

Treatment:

- By most definitions mental retardation is more accurately considered a *disability* rather than a *disease*.
- Mental Retardation can be distinguished in many ways from mental illness, such as schizophrenia or depression.
- Currently, there is no "cure" for an established disability, though with appropriate support and teaching, most individuals can learn to do many things.
- Although there is no specific medication for mental retardation, many people with developmental disabilities have further medical complications and may take several medications.
- Beyond that there are specific programs that people with developmental disabilities can take part in wherein they learn basic life skills.
- These "goals" may take a much longer amount of time for them to accomplish, but the ultimate goal is independence.
- This may be anything from independence in tooth brushing to an independent residence.
- People with developmental disabilities learn throughout their lives and can obtain many new skills even late in life with the help of their families, caregivers, clinicians and the people who coordinate the efforts of all of these people.

Nursing Management:

1. Assess all children for signs of developmental delays.

2. Administer prescribed medications for associated problems such as anticonvulsants for seizure disorders, and methylphenidate (Ritalin) for attention deficit hyperactivity disorder.

3. Support the family at the time of initial diagnosis by actively listening to their feelings and concerns and assessing their composite strengths.

4. Facilitate the child's self-care abilities by encouraging the parents to enroll the child in an early stimulation program, establishing a self-feeding program,

initiating independent toileting, and establishing an independent grooming program (all developmentally appropriate).

5. Promote optimal development by encouraging self-care goals and emphasize the universal needs of children, such as play, social interaction and parental limit setting.

6. Promote anticipatory guidance and problem solving by encouraging discussions regarding physical maturation and sexual behaviors.

7. Assist the family in planning for the child's future needs (e.g. Alternative to home care, especially as the parents near old age); refer them to community agencies.

8. Provide child and family teaching

   - Identify normal developmental milestones and appropriate stimulating activities including play and socialization.
   - Discuss the need for patience with the child's slow attainment of developmental milestones.
   - Inform parents about stimulation, safety and motivation.
   - Supply information regarding normal speech development and how to accentual nonverbal cues, such as facial expression and body language, to help cue speech development.
   - Explain the need for discipline that is simple, consistent and appropriate to the child's .
   - Review an adolescent's need for simple, practical sexual information that includes anatomy, physical development and conception.
   - Demonstrate ways to foster learning other than verbal explanation because the child is better able to deal with concrete objects than abstract concepts.
   - Point out the importance of positive self-esteem, built by accomplishing small successes in motivating the child to accomplish other tasks.

9. Encourage the prevention of mental retardation

   - Encourage early and regular prenatal care.
   - Provide support for high risk infants.
   - Administer immunizations, especially rubella immunization.

- Encourage genetic counselling when needed.
- Teach injury prevention – both intentional and unintentional.

- Mental retardation is defined as a significant limitation in the intellectual functioning and adaptive behaviors.
- Limited intellectual functioning is generally characterized by an IQ below 70 to 75, and limited adaptive behaviors are the inability of the individual to meet the standards expected for his/her cultural group. It is manifested in differences in conceptual, social, and practical life skills and begins before the age of 18 years.

Classification:

- Mild MR: IQ ranges from 50-55 to approximately 70-75. children can help in the community by simple manual services, educable, and are able to care for themselves.
- Moderate MR: IQ ranges from 35-40 to 50-55. Children are trainable, talk fairly well, dress themselves, control elimination, and even feed themselves without assistance.
- Sever MR: IQ below 20-25. Children are completely dependent on others for their life care, and require constant care and supervision.

Etiology:

- ✓ Prenatal errors in the development of the CNS (Down syndrome, Fragile X syndrome, Fetal alcohol syndrome, maternal infections such as rubella).
- ✓ Prenatal or postnatal changes in the biologic environment of the person (inborn errors of metabolism such as phenylketonuria and hypothyrodism).
- ✓ External forces lead to CNS changes (traumatic brain injuries, poison ingestion, hypoxia, infections such as meningitis).

Clinical Manifestation:

Children mentally retarded manifest delays in all areas of development, including motor movement, language, and adaptive behavior. They usually achieve developmental milestones more slowly than the average child.

- MR is sometimes accompanied by sensory impairment, speech problems, motor and orthopedic disabilities, and seizure disorders.

- Children with Down syndrome might have small head, flattened forehead, wide short neck, congenital cataracts, flat nose, small low-set ear, protruding tongue, hearing loss, short broad hands, and hypotonia.
- Children with Fragile X syndrome have long face, prominent jaw, large ears, large testicles.
- Fetal alcohol syndrome children have flat mid-face, long nasal bridge, skeletal and joints abnormalities, and hearing loss.

Treatment :

- Management focuses on early intervention to improve the degree of adaptive functioning. Simultaneous treatment of associated physical, emotional, and behavioral problems is provided.
- The child may require supportive care and assistance with ADLs. The plan of intervention changes as the child grows and his/her needs increase and the family situation evolves.

Nursing Management:

Prevention is important for some types of MR. all pregnant women should stop the alcohol use and nonprescription drugs. Encourage prenatal visits; this helps to prevent premature births, which have a higher association with MR.

Provide Emotional Support and Information:

- Family members need empathy and support both at the time of diagnosis and in the ensuing years.
- Introducing them to parents of other mentally retarded children might help, especially with very successful cases that made a good progress with the rehabilitation program.
- Parents need honest information and answers to their questions.
- Reinforce information provided by the genetic counselors and other healthcare professionals.
- They need to be informed about community resources designed to assist children with MR.
- Ask them if they have questioning case they to shy or embarrassed or unable to ask because of disbelief.

Maintain a Safe Environment:

- Children with MR require close supervisor because they may lack an understanding of common hazards.
- Ensure safety in the hospital environment.
- Assist parents to provide safety at home.
- This type of children may be trusting of others and sometimes is at risk for physical or sexual abuse.

Provide Assistance with Adaptive Functioning:

- Encourage parents' efforts to maximize the child's area of strength and identify needs related to adaptive behaviors.
- Refer them to the appropriate resources.
- Support parents' efforts to maintain the child's skills in toileting, dressing, and self care and inform them to be patient as it might take longer time than usual.

Clinical practice Guidelines for the Management of children with mental Retardation according to Dr.Satish

Medical intervention in MR :

- Parent Counseling.
- Treatment of the underlying disorder wherever possible.
- Early intervention in children who are at risk and those who already have developmental delay .
- Management comorbid psychiatric and medical problems.
- Parent training for home-based management.
- Referrals for special education ,physic-occupational therapy, speech therapy, vocational training ,and parent organizations.
- Helping parents to access social welfare benefits etc.
- Checking about the need for genetic counseling and offering appropriate help .

Overview of individual ,family and community level interventions

individual:

- Medical intervention.
- Sensory –motor &cognitive stimulation.
- Speech and language therapy.
- Physiotherapy and occupational therapy.
- Self-help and social skills training .
- Education –inclusion in normal stream or special education.
- Pre –vocational training.
- Vocational training and job placement .

Family:

- Parent counseling : Alleviation of stress & enhancing coping & adaptation.
- Parent training for home based intervention .
- Family networking ;parent association.
- Helping families to access community and governmental resources and benefits.

Community :

- Legislations ,policies and programs .
- Social security benefits to individuals families .

Prevention of mental retardation :

The levels of prevention as recommended by WHO provides a good framework to conceptualize prevention .It is estimated that around 25% to 30% of MR is potentially preventable by public health measures such as improving the nutritional status ,access to basic medical facilities ,and good prenatal care .

Research

Lead exposure can cause mental retardation in children living near sites

Children living near toxic waste sites in lower and middle income countries such as India, Philippines and Indonesia may experience higher blood lead levels, resulting in a loss of IQ points. (2013)

Children with Hearing Impairment:

The first 3 to 4 years of childhood are most important for speech and language development. A hearing deficit during this time can interfere with this process and can impact the child's cognitive, social, and emotional development.

Hearing Impairment, congenital or acquired, can range in severity from mild to profound. Deafness is defined as "hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification".

These hearing impairments are expressed in terms of Decibels "dB", which are units for loudness. The following table describes the severity of hearing loss.

Type of Loss	Decibel Level "dB"	Hearing Ability
Slight/Mild	26-40	Some speech sounds are difficult to perceive, particularly unvoiced consonant sounds.
Moderate	41-60	Most normal conversational sounds are missed.
Sever	61-80	Speech sounds can not be heard at a normal conversational level.
Profound	81-90	No speech sounds can be heard.
Deaf	> 90	No Sounds at all can be heard.

Etiology:

Generally, about 50% of hearing loss cases is genetically caused, usually with a recessive inheritance pattern with GJB2 gene abnormalities. Another 25% is due to environmental causes around the time of birth, and the remainder is due to unknown causes.

Genetic causes of childhood congenital deafness are malformations of head and neck structure and Down syndrome. Non-genetic causes are perinatal infections (maternal rubella, toxoplasmosis), metabolic diseases, perinatal asphyxia, radiation, Rh incompatibility, birth trauma, and toxic drugs.

Acquired deafness is caused by infections (chickenpox, mumps, and meningitis), toxic drugs, trauma, NICU noises, and environmental noises. A sound level over 80 dB for a sustained amount of time have been shown to produce hearing loss in humans.

Classification:

Four types of hearing loss have been identified. They include:

- Conductive Hearing Loss: it results from any condition that affects the progress of sound into the ear canal or across the middle ear such as damage, inflammation, or obstruction.
- Sensorineural Hearing Loss: it results from damage or malformation of the middle ear or auditory nerve.
- Mixed Hearing Loss: it results from interference with transmission of sound in the middle ear and along the neural pathways.
- Central Hearing Loss: it is caused by damage that interrupts sound transmission between the brain stem and the cerebral cortex.

Clinical Manifestations:

. Children with hearing loss will show characteristic behavioral signs that indicate the problem:

Infants:

- Have a diminished or absent startle reflex to loud noises.
- Do not awaken when environment is very noisy.
- Awaken only to touch.
- Do not turn head to sound at 3-4 months of age.
- Do not localize sounds at 6-10 months.
- Babbles little or not at all.

Toddlers and Preschoolers:

- Speak unintelligibly, in a monotone, or not at all.
- Communicate through gestures.
- Unable to follow directions.
- Appear developmentally delayed.
- Appear emotionally immature.
- Yell inappropriately.
- Do not respond to doorbell or telephone.
- Focus on facial expressions rather than verbal communications.

School-age and Adolescents:

- Ask to have statements repeated.
- Answer questions inappropriately.
- Inattentive.
- Perform poorly at school.
- Have speech abnormality or speak in a monotone.
- Sit close to or turn the TV or radio loudly.
- Prefer to play alone.

Clinical Therapy:

Guidelines by the American Academy of Pediatrics 2007

The following guidelines provide the foundation for effective Early Hearing Detection and Intervention "EHDI" systems.

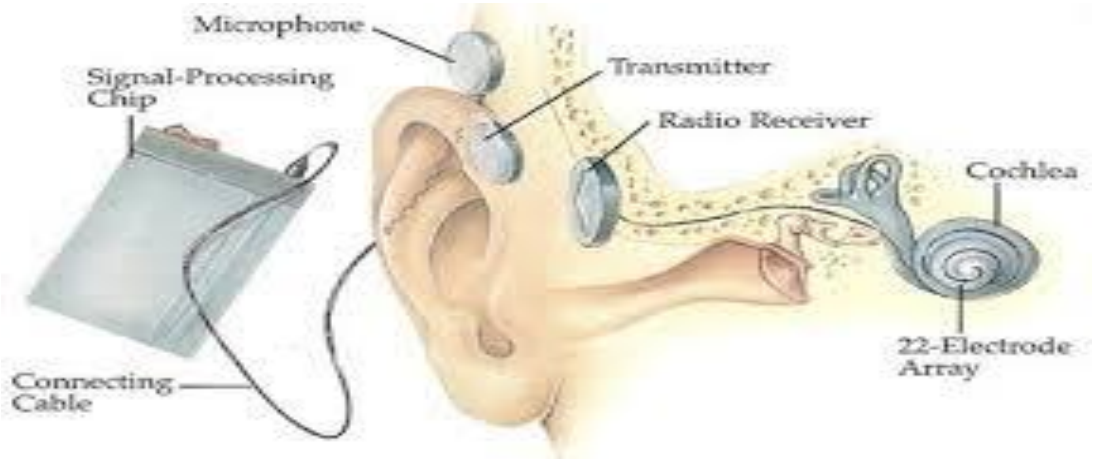
- All infants should have access to hearing screening using a physiologic measure at no later than 1 month of age.
- All infants who do not pass the initial hearing screening and the subsequent rescreening should have appropriate audiological and medical

evaluations to confirm the presence of hearing loss at no later than 3 months of age.

- All infants with confirmed permanent hearing loss should receive early intervention services as soon as possible after diagnosis but at no later than 6 months of age.
- The EHDI system should be family centered with infant and family rights and privacy guaranteed through informed choice, shared decision-making.
- Families should have access to information about all intervention and treatment options and counseling regarding hearing loss.
- The child and family should have immediate access to high-quality technology including hearing aids, cochlear implants, and other assistive devices when appropriate.
- All infants and children should be monitored for hearing loss in the medical home. Continued assessment of communication development should be provided by appropriate professionals to all children with or without risk indicators for hearing loss.
- Appropriate interdisciplinary intervention programs for infants with hearing loss and their families should be provided by professionals who are knowledgeable about childhood hearing loss (pediatricians, audiologists, speech-language pathologists, nurses, teachers, social worker).
- To ensure informed decision-making, parents of infants with newly diagnosed hearing loss should be offered opportunities to interact with other families who have infants or children with hearing loss as well as adults and children who are deaf or hard of hearing.
- Families should receive information about childhood hearing loss in easily understood language.
- Families have the right to accept or decline hearing screening or any follow-up care for their newborn infant.

A hearing aid may be described for children with conductive loss (see figure). Sensorineural loss is more difficult to treat, but bone conduction hearing aids have been used in some children .Some families choose their child to be treated with a cochlear implant It is a small electronic device that helps to provide sound for those who are deaf or profoundly hard of hearing, it consists of:

1. A microphone to pick up sounds that is located outside the body; It is worn as a headpiece behind the ear.
2. A speech processor that organizes sounds from the microphone; it is worn behind the ear or on a belt.
3. A transmission that transmits the sounds into electrical impulses; it is a part of the headpiece behind the ear.
4. Electrodes that send the signals to the brain; this receiver is implanted in the skin behind the ear with a wire leading to the cochlear fluid in the middle ear.



Nursing Management:

Prevention and Early Identification:

- Diminish exposure to loud noises.
- Music should be turned down.
- Ear protection should be worn for other activities.
- Newborn screening, developmental assessment, and childhood screening programs facilitate early detection.
- Infants should be tested for hearing loss at age of 3 months. And in case positively diagnosed, interventions should begin before 6 months of age.
- Be aware of the behavioral indicators in early childhood.

Care in the Community:

- Refer the parents to an early intervention program as soon as the diagnosis is made.
- Refer parents to other resources of information, and interpret the information simply.

- Help parents to connect with other people who have chosen various approaches for their children.

Facilitate Ability to Receive Spoken Language:

- If hearing loss is mild or the child and reads lips, first obtain the child's attention by lightly touching him/her or saying the child's name.
- Position your face 1-2 m from the child's and make sure that the child's eyes are focused on your face and lips.
- Speak at a normal rate and tone, and use facial expressions that show caring and concerns.
- If the child doesn't understand, rephrase the information in shorter simpler sentence.
- Give the child time to comprehend.
- Give and take consistent feedback.
- For children with hearing aids, speak slowly and positioned 15-45 cm from the microphone.
- Make sure that the batteries are fresh and new.
- Reduce all background noise.

Facilitate Ability to Send Information:

- Children use speech therapy to enhance speech.
- They often taught to sign, ginger spell, or use cued speech.
- Taking time to listen carefully is important as understanding what the child is trying to say .
- Encourage family members to learn sign language too, because using or watching hands needs less concentration than lip-reading.
- Use picture and drawings.

Provide Emotional Support:

- Help the parents to understand the child's disability and its effect of his development.
- Provide accurate information about their concerns.
- Refer to the community services available.
- Encourage parents to contact other families who have children with hearing loss.

Research :

- Personal listening devices can impair hearing: Study

Personal listening devices like iPods have become increasingly popular among young and not so young people in recent years. (2010)

Blindness

Childhood blindness refers to a group of diseases and conditions occurring in childhood or early adolescence, which, if left untreated, result in blindness or severe visual impairment that are likely to be untreatable later in life. The major causes of blindness in children vary widely from region to region, being largely determined by socioeconomic development, and the availability of primary health care and eye care services. In high-income countries, lesions of the optic nerve and higher visual pathways predominate as the cause of blindness, while corneal scarring from measles, vitamin A deficiency, the use of harmful traditional eye remedies, ophthalmia neonatorum, and rubella cataract are the major causes in low-income countries. Retinopathy of prematurity is an important cause in middle-income countries. Other significant causes in all countries are congenital abnormalities, such as cataract, glaucoma, and hereditary retinal dystrophies.

Magnitude

According to Gilbert and Foster, the prevalence of blindness in children varies according to socioeconomic development and under-5 mortality rates. In low-income countries with high under-5 mortality rates, the prevalence may be as high as 1.5 per 1000 children, while in high-income countries with low under-5 mortality rates, the prevalence is around 0.3 per 1000 children. Using this correlation to estimate the prevalence of blindness in children, the number of blind children in the world is approximately 1.4 million. Approximately three-quarters of the world's blind children live in the poorest regions of Africa and Asia.

Prevention and treatment of childhood blindness is disease specific. For Vitamin A deficiency, at a cost of only 5 US cents a dose, vitamin A supplements reduce child mortality by up to 34% in areas where Vitamin A deficiency is a public health problem. As vitamin A deficiency manifests often during an outbreak of measles, properly planned and implemented national vaccination programmes against measles has reduced the prevalence of eye complications. In middle-income countries, retinopathy of prematurity (ROP) is among the leading causes of blindness, the incidence of which can be reduced through availability and affordability of screening and curative services. Early treatment of cataract and glaucoma can be beneficial, while low vision devices are helpful in children with residual vision.

The Global Childhood Blindness Programme

The Lions Clubs International Foundation, through their "SightFirst" Initiative is one of the major partners with WHO in addressing the causes of childhood blindness. Because of its extensive social and emotional burdens, prevention of childhood blindness is generally high on the agenda. The causes of childhood blindness, amenable to prevention and treatment, receive attention, not only because there are interventions available to handle these conditions, but also devastating consequences if not addressed.

The International Braille and Technology Center for the Blind (IBTC) was established in 1990. It is a comprehensive demonstration and evaluation center where the NFB has collected every type of speech output and Braille technology, both hardware and software, available in the United States, Canada, and many other countries as well.

Myth: Safety goggles are more trouble than they are worth.

Fact: There are 500,000 eye injuries every year in the USA. 50% of these accidents occur at home. The leading cause of blindness in children is eye injury. 90% of injuries can be avoided by using proper eye protection.

Myth: Poorly fit contacts do not harm your eyes.

Fact: Poorly fit contact lenses can damage your cornea. If you use contact lenses, have them checked regularly.

Myth: Eating carrots will improve your vision.

Fact: Carrots are high in Vitamin A, which is important for a balanced diet. Eating carrots or other foods high in Vitamin A will not improve your vision. Taking large amounts of Vitamin A can be very harmful. People that do not eat a balanced diet can develop vision problems along with other problems as they age.

Myth: Sitting close to the television will harm your eyes.

Fact: There is no evidence that sitting close to the television will damage your eyes. If this were true, office workers that sit 8 hours a day 17 inches from their computer screens, would all be blind. Sit wherever you are most comfortable when watching TV.

Normal Development of Vision

The eyes begin to develop at 22 days of gestation. Development of the eye is not complete at birth. However, newborn is able to focus on object at a distance of 3 feet. By 4-6 months of age infants show preference for bright colors as red and able to focus clearly on objects at all distances.

Medical definition of blind: visual acuity of 20/200 or less with correction or visual field narrowed to 20 degree or less.

Incidence: 5000 cases of blindness are diagnosed in children younger than 20 years of age each year.

Pathophysiology: damage to optic nerve or visual center of brain prevents child from using vision to explore the world.

Clinical Manifestations of Visual Loss:

Infants:

- Pupils not react to light.
- Does not stare at surroundings.

- Does not follow a moving object with eyes.

Toddlers and preschoolers

- Rub eyes frequently.
- Squints or tilts head to see.
- Moves hesitantly or walks close to the wall.
- Holds books or toys close to face.
- Difficulty in identifying faces or numbers in rooms.
- Complains of headaches, dizziness, nausea or vomiting.

Causes:

- Visual impairment can be caused by number of genetic and prenatal or postnatal conditions as perinatal infections (herpes, gonorrhea, rubella, syphilis or toxoplasmosis), retinopathy of prematurity, postnatal infection (meningitis).
- Trauma is common cause in children: **injuries** to eyeball or supporting structures as eyelids, conjunctiva and lacriminal glands can be classified as **penetrating** injuries that caused by sharp objects as sticks, knives or scissors and American academy of Pediatrics (AAP) (2004) reported that there is an increase eye injuries caused by paintball guns used by boys under 15 years old, who do not wear protective eye wear or **non penetrating** injuries that caused by foreign body in eye, lacerations, blow from blunt objects as ball or fist.
- Infection: the most common eye infection is conjunctivitis.

Diagnosis:

- Visual acuity tests, neurological tests and diagnostic test according to the etiology.
- Black bird Preschool Vision Test- six cards, each with varying sizes of Black bird-child indicates direction of the bird is flying
- Snellen- child indicates which way the legs of the letter E point.
- Denver Eye Screening Test-a single E card- child indicates which way E is pointing.
- The Snellen alphabet chart is used for older children who can identify letters.

Guidelines for caregivers and nurse according to vision learning center in America (2005)

I- Assess for visual concerns:

In infancy: the nurse should observe neonate's response to visual stimuli as following light or object, and ask parent about their concern regarding visual responsiveness of child as lack of eye contact from the infant.

In childhood: testing for visual acuity is essential; the school nurse has responsibility for visual screening in school children.

II- Support the child and family:

- Parents need support and help to gain a realistic understanding of child's abilities.
- The family is encouraged to investigate appropriate early intervention and educational programs for their child as soon as possible.
- Sources of information include local schools for blind, National Association for parents of children with visual impairment, and National Association for Visually Handicapped.

III- Promote parent-child attachment:

- Facial interplay & communication between child and parent impaired.
- Parents are encouraged to look for other cues that indicate the infant responding to them as blinking of eyelids, acceleration or slowing of activity, faster or slower breathing when parents come near and production of throaty sounds by infant when they speak to infant.
- Parents are encouraged to show affection using non visual methods as talking, cuddling or rocking.

IV- Promote the child's optimum development:

I- Development and independence:

- Parents should to expose infant to visual experiences early as sit infant supported in his seat and allow infant to crawl and reach objects.
- Parents should provide safe environment.
- Describe environment in words familiar to child as he needs orientation to navigate safely.
- Keep objects in environment in the same location that enables child to move within room independently.

- Call child by his name and introduce yourself before touching, this avoid frightening child.
- Encourage family to involve child in special programs for blind child as soon as possible to enable him to learn skills to ambulate safely.
- Principles used for promoting independence in sight children can be applied with emphasis on non visual cues e.g. child need help in dressing as arrangement of clothing for style coordination and color.
- Explain day's activities early in morning to anticipate which activities will require assistance and which can be managed independently.
- Offer choices and ask child for help in arranging day's schedule that allow child to have some control.
- Anticipate that all tasks will take more time for child, so he needs detailed description of how to perform new activities.
- Consistent limit setting to learn acceptable behavior.
- Do not overprotect child; allow child to gain self-confidence.

II- Play and socialization:

- Blind children are not learn to play automatically because they can not imitate others or actively explore environment as sighted children. So, they must be stimulated especially by touch and taught to play.
- Parents should select appropriate play materials that promote fine & gross motor development & stimulate senses of hearing, touch, smell.
- Socialization needs of blind children are the same as for sighted children, they are able to communicate with other children and participate in suitable activities, new trend is to include these children with sighted to help them to adjust to outside world and independence.

III- Education:

- Although the child can learn via verbal lecturing, he is unable to read the written word or to write without special education.
- Child must rely on Braille, a system that uses raised dots to represent each letter and number.
- The child can read Braille with fingers and can write message using small typewriter-like device called Braillewriter. However, it is not useful for communicating with others unless they read Braille.

- The use of recorder is helpful for leaving message for others and for taking notes during classroom lectures and for mathematics calculations, portable calculators with voice synthesizers are available.

Nursing management with blindness child

- Provide kinesthetic, tactile, and auditory stimulation during play and in daily care (e.g., talking and playing). Provide music while bathing an infant using bells and other noises on each side of infant.mVerbally describe to a child all actions being carried out by adult.
- Evaluate environment for potential safety hazards based on age of

child and degree of impairment. Be particularly alert to objects that

give visual cues to their dangers (e.g., stoves, fireplaces, candles)

- Eliminate safety hazards and protect the child from exposure. Take the child on a four of new rooms, explaining safety hazards (e.g., schools, hotel room, hospital room).
- Help parents plan early, regular social activities with other children.
- Provide opportunities and encourage self-feeding activities.
- Provide an environment rich in sensory input.
- Assess growth and development during regular examinations to

identify the child's strengths and needs.

Research :

- **Gene therapy may help improve congenital blindness in children (**2009**)**

- **Basically eating fish may protect against type of blindness**

Increasing intake of the omega-3 fatty acids DHA and EPA, found in popular fish-oil supplements, may protect against blindness resulting from abnormal blood vessel growth in the eye (2007)

Fainally Examples Organizations working on disability issues in Egypt

1) Al Nour Wal Amal Association

A free boarding educational institution for **blind girls and women**. The primary aim of Al Nour Wal Amal Association is to fulfill the rights of

blind girls and women by providing them with free education, literacy programs, vocational training and job opportunities.

2) **Asdaa's Association** for Serving the **Hearing Impaired**
The Asddaa's Association Serving the Hearing Impaired provides computer training, speech and sign language training, medical exams,sign language interpreter services, and training for teachers of the deaf. One of the association's main goals is to eradicate illiteracy among the deaf and hearing impaired.

3) Egyptian Autistic Society

Egyptian Autistic Society is a non-profit organization with the mission of providing early intervention services that address autistic children's learning and development needs and to increasing awareness and understanding of autism in Egypt.

4) Egyptian Federation of Organizations for People with Special Needs

The Egyptian Federation of Organizations for People with Special Needs is an Associate Member of Rehabilitation International working for the prevention, rehabilitation and the equalization of opportunities for people with disabilities.

5) Egyptian Learning Disabilities Association (ELDA)

The Egyptian Learning Disabilities Association is a non-profitable association enlightening the Egyptian society with the most recent world and national events by researching and networking together with the international conferences held by the world most famous universities working in the field of learning disabilities and those dealing with teaching methodologies.

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