

# **INFANTS AND CHILDREN WITH HIV - AN OCCUPATIONAL THERAPY PERSPECTIVE**

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## **Introduction**

Women and children with HIV are a rapidly growing population. Pediatric (0-12yrs) HIV contribute to about 15 -20% of total AIDS cases in developing nations.

The first case of perinatal infection with AIDS was documented in 1987. In India pediatric HIV account for 4% of the HIV population. In India, primarily mother to child or vertical transmission is common. The current vertical transmission rate is 25 -30% because only 1 -2% of women receive ART therapeutically and prophylactically.

In India antenatal prevalence of HIV is greater than 1 %. All children with HIV tend to have a high mortality rate.

## **Mode of Transmission in Children**

Infants and children primarily acquire HIV prenatally (Institute of Medicine, 1988). Other modes include, Blood product transfusion, treatment for Hemophilia and sexual abuse.

## **Medical / Clinical Manifestation**

Children with HIV present a spectrum of clinical manifestations. They may range from being critically or terminally ill. Scott (1987) and Oleske (1987) describe a range of clinical manifestation as

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1. Wasting syndrome.
2. Recurrent bacterial infections.
3. Lymphadenopathy.
4. Hepatitis.
5. Renal disease.
6. Developmental delay.
7. Chronic encephalopathy.
8. Seizure disorder.
9. Motor Dysfunction.
10. Microcephaly.
11. Cortical atrophy.

Falloom et al., (1988) describe several specific manifestations like,

1. Weight loss.
2. Decrease birth weight.
3. Failure to thrive.
4. Diarrhea
5. Hepato splenomegaly.
6. Dermatitis.
7. Fevers.
8. Bacterial Infections (sepsis, pneumonia, meningitis).
9. Opportunistic infections (pneumocystis, pneumonia, Candida infections).

The Neurological Manifestation in children with HIV is Encephalopathy, leading to developmental delay or in deterioration of motor skills and cognitive function. (Belnian et al 1985). Neurologic abnormalities such as Paresis, Pyramidal tract signs, Ataxia, Abnormal Tone or Microcephaly have been described in children with HIV.

### **Intervention**

Medical advances have improved the intervention available and the quality of life for children living with HIV/AIDS. Service delivery that is coordinated, flexible

and interdisciplinary is essential to meet the needs of HIV children. Occupational Therapy being a part of the Interdisciplinary model plays a major role in the life of these children. Providing a safe and supportive environment is essential for all Occupational Therapy intervention.

## **Occupational Therapy Intervention For Infants And Children With Hiv**

Occupational Therapy intervention for children with HIV and AIDS include Holistic Assessment and treatment considering the physical, psychosocial and environmental domains of function.

### **Assessments Of Infants And Children With HIV**

Evaluation is typically guided by interventions with caregivers. Information about child's developmental history, medical history, separation and losses and behavior in different contexts is assessed. Observation of children engaged in school activities or play contribute to useful information.

Functional performance of children in areas of feeding, mobility and self-care is also assessed through observation or Pediatric Evaluation of Disability Index (PEDI) (Haley et al, 1992). Information of school performance is also obtained by interviewing teachers and caregivers or Administration of School Function Assessment.

During evaluation factors such as pain, fatigue, frustration, irritability, depression, and separation anxiety must be considered.

### **Occupational Therapy Intervention**

Occupational Therapists use play, purposeful activities such as arts, therapeutic activities such as developmental, functional, activities of daily living (ADL) and fine motor skills to improve the quality of life of children with HIV.

Occupational Therapist first **educate the care giver and family** regarding the disease then teach them techniques to position, handle and provide home therapy for their child. These can be done by the use of splints, seating and adaptive

devices required for day to day function of the child.

Infants and children presenting with neurodevelopment problems are treated with Neuro developmental Therapy (NDT). NDT is a technique which uses key points of control on body parts to develop normal movement patterns and developmental sequences in a child like Head control, Roll Over, Crawl, Sit and Stand.

Occupational Therapist also work to improve higher **gross motor skills** of children like hopping, jumping, skipping, crossing obstacles, climbing steps which may be difficult due to reduced muscle strength and fatigue.

Biomechanical intervention is also used to improve children's strength, endurance and mobility by using Thera band, Thera tubing exercises, environmental and classroom modifications.

**Fine motor skills** are also affected and could cause problems in handwriting, cutting and pasting activities in school. So Occupational Therapist teaches the children handwriting skills, provide writing aids, vertical writing pad.

Frequently children with HIV exhibit **cognitive problems** such as forgetfulness, memory, orientation problems, disorganization in task performance and decrease in task persistence. These problems could be due to psychological issues or CNS damage. So Occupational Therapists provide a more structured environment, small groups for task performance, breaking tasks to small steps modifying the teaching and learning process to function appropriately. Environmental cues, feedback and reinforcements are also used to tackle cognitive problems.

**Independence in Self care and ADL** is affected due to decreased muscle strength. So children are given adaptations to compensate for muscle weakness like large handled spoon, comb, Velcro's instead of button, to be independent in self care activities.

Some infants and children with HIV also show **sensory modulation**

**problems** (over sensitivity or under sensitivity) to sensory stimuli from the environment. This could be due to over protective care giving practices, frequent hospitalizations and extensive convalescence.

These issues are addressed by using **sensory integration techniques** and desensitization procedures (DuHamel et al., 1999), (Wilbarger & Wilbarger 1991).

**School going children** are also taught **energy conservation, work simplification** techniques to handle fatigue. Frequent absences from school due to medical illness and appointments in older school aged children have difficulty with managing daily life routines. So Occupational Therapists work with these children to provide habit training and time scheduling to bring a balance between ADL, Work and Leisure.

Thus we see that it is very important when working with children with HIV all areas of life should be tackled. Because of the chronic and sporadic nature of the disease, it is often challenging to predict what interventions will be necessary or effective to achieve desired outcomes in a given time.

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