



HIV Among Preschool Children: A Review

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Structured Abstract

Background:

Human Immunodeficiency Virus (HIV) remains a global health challenge, disproportionately affecting children under five years. Mother-to-child transmission (MTCT) is the leading cause of pediatric infections, especially in low- and middle-income countries.

Objectives:

This review aims to summarize the global and Indian epidemiology of HIV among preschool children, explore clinical challenges, prevention strategies, psychosocial implications, and highlight the role of nurses in prevention and management.

Methods:

A narrative review was conducted using data from WHO, UNAIDS, UNICEF, NACO, and peer-reviewed literature published between 2000–2023. Key themes were synthesized to provide a comprehensive overview.

Results:

Globally, 1.5 million children under 15 years live with HIV, with sub-Saharan Africa bearing the highest burden. In India, around 70,000 children are affected, with vertical transmission rates estimated at 10–15%. Preschool children experience growth delays, opportunistic infections, and neurocognitive impairments. Despite improvements in prevention of mother-to-child transmission (PMTCT), challenges remain in early infant diagnosis, ART adherence, and social stigma. Nurses play a critical role in screening, counseling, ART adherence, nutritional care, and community-based interventions.

Conclusion:

Strengthening PMTCT services, improving pediatric ART availability, and reducing stigma are essential to achieving an HIV-free generation. Nurses are at the frontline of this effort, providing clinical, psychosocial, and community support for affected children and families.

Keywords: HIV, Preschool children, Mother-to-child transmission, Pediatric HIV, Community health nursing, India

Introduction

HIV continues to pose serious threats to child survival and development. Preschool-aged children (1–5 years) face unique vulnerabilities due to dependence on caregivers, immature immunity, and developmental needs. Despite significant advances in prevention and treatment, challenges persist in diagnosis, access to therapy, and addressing psychosocial issues. This review explores the epidemiological trends, clinical manifestations, prevention strategies, and the pivotal role of nurses in managing HIV among preschool children.

Epidemiology

Global Scenario

Approximately 1.5 million children under 15 years are living with HIV worldwide (UNAIDS, 2023).

Around 130,000 new infections occurred in 2022, with 90% in sub-Saharan Africa.

Without ART, over 50% of HIV-infected children die before age two.

Indian Scenario

70,000 children (0–14 years) estimated to be living with HIV (NACO, 2022).

Transmission is primarily vertical, with an estimated 10–15% MTCT rate.

High-burden states include Maharashtra, Karnataka, Andhra Pradesh, and Tamil Nadu.

Challenges include limited pediatric ART formulations, stigma, and delayed testing.

Modes of Transmission in Preschool Children

1. Mother-to-child transmission (MTCT): During pregnancy, childbirth, or breastfeeding.
2. Unsafe medical practices: Blood transfusion, contaminated injections.
3. Sexual abuse: Though rare, documented in vulnerable populations.

Clinical Manifestations

Growth and developmental delays.

Recurrent respiratory and diarrheal infections.

Opportunistic infections such as tuberculosis and oral candidiasis.

Neurocognitive impairment and behavioral issues.

Diagnosis

Early Infant Diagnosis (EID): DNA PCR at 6 weeks and follow-up testing.

Serological testing: Limited use below 18 months due to maternal antibodies.

Barriers include poor access, inadequate lab capacity, and stigma-related delays.

Treatment and Management

Antiretroviral Therapy (ART): Immediate initiation for all children, per WHO guidelines.

Opportunistic infection prophylaxis: Cotrimoxazole preventive therapy.

Nutritional care: To address growth faltering and immunity.

Immunization: Following the national schedule with appropriate modifications.

Family-centered care: Counseling, adherence support, and caregiver involvement.

Psychosocial Impact

Preschool children may face developmental delays, emotional distress, and stigma.

Loss of parents due to HIV/AIDS leads to neglect, malnutrition, and reduced school readiness.

Caregivers often encounter discrimination, further complicating care provision.

Prevention Strategies

Global Interventions

Universal HIV screening during pregnancy.

Lifelong ART for HIV-positive mothers.

Safe delivery practices.

Exclusive breastfeeding with maternal ART or safe alternatives.

Indian Context

Option B+ strategy under NACP: Lifelong ART for all pregnant and breastfeeding women.

Integration of HIV testing with antenatal clinics.

Community education on safe infant feeding practices.

Challenges

Late diagnosis due to poor EID coverage.

Limited pediatric-friendly ART formulations.

Poor treatment adherence due to caregiver burden.

Stigma, discrimination, and social isolation.

Gaps in rural health infrastructure.

Role of Nurses in Management

1. Early Detection and Screening

Counseling and testing pregnant women.

Ensuring EID follow-up for infants.

2. Prevention of Transmission

Educating mothers on PMTCT and safe breastfeeding.

Supporting adherence to ART in mothers and children.

3. Clinical Care

Monitoring ART adherence and side effects.

Growth monitoring and nutritional counseling.

Early recognition of opportunistic infections.

4. Psychosocial Support

Family counseling to reduce stigma.

Linking families to welfare schemes and support groups.

5. Community-Based Interventions

Health education and awareness campaigns.

Home visits for adherence monitoring.



Mobilization of local resources to support children's health and schooling.

Conclusion

HIV among preschool children remains a pressing issue, particularly in low-resource settings. While global and national initiatives have reduced the incidence, challenges persist in diagnosis, treatment, and stigma reduction. Nurses, with their frontline role in maternal and child health services, are uniquely positioned to strengthen prevention, care, and psychosocial support. Empowering nurses through training, policy support, and community integration will be essential in moving toward the goal of an HIV-free generation.

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