Research Article

Sociodemographic profile and health status of children living with HIV–AIDS attached to an NGO (ADHAR) of Ahmedabad city

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Abstract

Background: Acquired immunodeficiency syndrome (AIDS) has emerged as one of the most serious public health problems in India.

Objectives: This study was conducted (1) to study the sociodemographic profile of children living with HIV/ AIDS, (2) to study health profile in detail of children living with HIV/AIDS, and (3) to study and find out the route of transmission.

Materials and Methods: It was a cross-sectional study. A semi-structured and pretested pro forma was used to interview and examine HIV+ children. Prior verbal and written consent was taken from parents of children. This study included 90 HIV+ children (5–14 years) related to ADHAR, an NGO of Ahmedabad city, during the month of April to June 2011.

Results: This study included 90 HIV+ children (age range, 5–14 years; 53% female and 47% male). Of them, 65 (72.2%) were in 5–9 years (primary school) age group; 30% were school dropouts. Majority of children (51, 56.7%) belonged to social class 4. Fifty-nine (65.5%) children had both parents infected with HIV. In 63% cases, only parents knew HIV-positive status of their children, and in 37% cases parents as well as others (friends, teachers, and other relatives) knew the HIV-positive status. Twenty-three (25.5%) children had poor hygiene habits. Mothers of 40% and fathers of 25.6% children were illiterate. Sixty (66.6%) children were receiving antiretroviral therapy. The overall prevalence of malnutrition in this study was 20%. Twenty-two (24.4%) children had signs of vitamin B complex deficiency. Prevalence of anemia in these children was 62.2%.

Conclusion: Poor nutritional status, hygiene, and various nutritional deficiencies among these children need great attention and health education needs to be imparted.

KEY WORDS: HIV, AIDS, pediatric HIV, sociodemographic profile, ART

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Introduction

Since eternity, the greatest scourges of mankind have been challenged and overcome in different ages and different parts of the world. Some of the glaring examples are plague, smallpox, tuberculosis, and polio. However, the nature keeps throwing up the new challenges to test our strength and the will to survive. The biggest threat to the mankind today from

their health perspective is probably a virus named human immunodeficiency virus (HIV). However, the illness caused by HIV and its possible fatal consequences are a major health challenge. In the absence of cure or a vaccine, the enormous number of debilitating illnesses and deaths that will be caused by the rapid spread of HIV in South-east and South Asia, particularly in India, is a major developmental problem with far-reaching impact beyond the health sector. AIDS (acquired immunodeficiency syndrome) is becoming a major cause of child mortality that challenges conventional views of public health progress.[1]

Globally, there are 33.3 million people living with HIV/AIDS (PLHA), in which 2.6 million are the cases of new infections and 1.8 million deaths occurred due to AIDS in 2009. Among which 2.5 million children under 15 years were living with HIV/AIDS with 3,70,000 new infection and 2,60,000 deaths occurred due to AIDS.[2] It is estimated that in 2010, there were 2.31 million PLHA in India with an estimated adult HIV prevalence of 0.34%. Out of the estimated number of PLHA, 39% are females and 3.5% are children.[3] While access to affordable treatment is indeed a key issue, another issue causing concern is the reduced expenditure on children's education in Children Living with HIV/AIDS (CLHA) families. This is an indication that HIV may be exacerbating child labor in India, as observed in several worst affected countries. The issue of stigma and discrimination also needs to be addressed as a large number of HIV-positive children are victims of ignorance and circumstances, and are looked upon as culprits.[4]

CLHA are facing so many problems such as rejection by other family members and community, social stigmatization, poor socioeconomic status, access of health-care services, and physical and stress-related problems.[5] This work was undertaken to evaluate the health and sociodemographic profile of CLHA and to study and find out the route of transmission.

Materials and Methods

The study was a cross-sectional study. A nongovernmental organization (ADHAR) of Ahmedabad city was selected by purposive sampling. After taking the permission of manager of the NGO and obtaining informed written consent of the parents of children, 90 HIV+ children (aged 5–14 years) related to this NGO were examined during April to June 2011 using predesigned, pretested, semi-structured WHO standard with Indian Council of Medical Research modification questionnaire for nutritional deficiencies. Pro forma contained sociodemographic information, anthropometry, and general health checkup of the child. For deciding nutritional status of children, we used Indian Academy of Pediatric Classification.

Statistics

Data were analyzed using SPSS, version 17 (trial version). Parameters such as rate, ratio, and percentages were calculated. To have valid interpretation of rates, 95% confidence intervals (CI) were calculated. To test the significance of the difference among the statistical parameters in different subsets of population, we used suitable statistical tests.

Table 1: Gender-wise distribution of children according to age groups

Age groups	Female	Male	Total
5–9	31 (34.4)	34 (37.7)	65 (72.2)
10–14	11 (12.2)	14 (15.5)	25 (27.8)
Total	42 (46.6)	48 (53.4)	90 (100)

Figures given in parentheses are percentages.

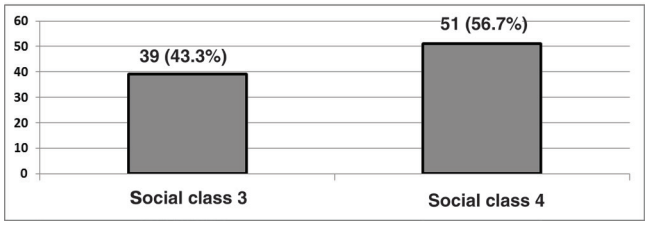

Figure 1: Distribution of children according to their social classification.

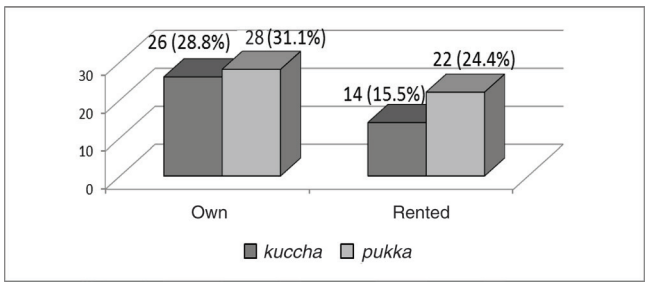

Figure 2: Distribution of children according to their residence.

Results

Age of the study children ranged from 5 to 14 years. Out of total (90) children, 48 (53%) were male, 65 (72.2%) were in 5–9 years (primary school) age group, whereas 25 (27.8%) belonged to 10–19 years (adolescent) age group [Table 1]. Twenty-seven (30%) children were school dropouts.

Majority of children (51, 56.7%) belonged social class 4 (according to modified Prasad's social classification); 36 (40%) children lived in rented house. Forty (44.4%) children lived in *kuccha* house [Figures 1 and 2]. Overcrowding was present in homes of 84 (93.5%) of children. Twenty-three (25.5%) children had poor hygiene and 36 (40%) mothers and 23 (25.5%) fathers of children were illiterate [Table 2].

In cases of 57 (63%) children, only their parents knew their HIV-positive status whereas in 33 (37%) cases, parents as

Table 2: Distribution of children according to education of their parents

Type of education	Education of mother	Education of father
Illiterate	36 (40.0)	23 (25.5)
Primary level education (standard 1–7)	35 (38.8)	34 (37.7)
Secondary level education and above (8 standard and above)	19 (21.1)	33 (36.6)
Total	90 (100)	90 (100)

Figures given in parentheses are percentages.

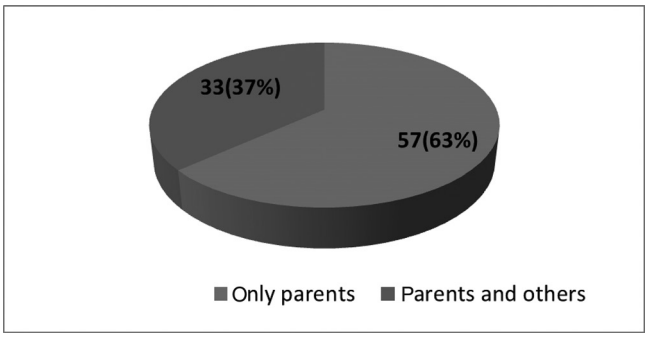

Figure 3: Distribution of children according to their HIV status known by persons.

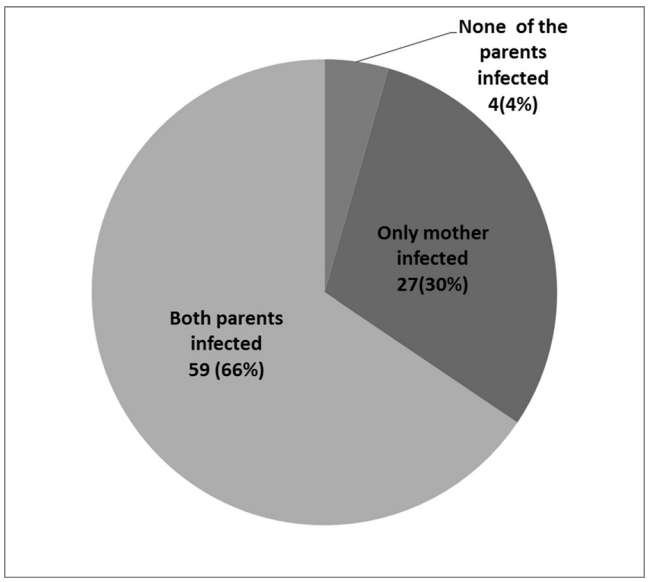

Figure 4: Distribution of children according to HIV status of their parents.

well as others (friends, teachers, and other relatives) knew their HIV-positive status [Figure 3]. Fifty-nine (65.5%) children had both parents infected with HIV [Figure 4]. Sixty (66.6%) children were receiving antiretroviral therapy (ART).

The overall prevalence of malnutrition in this study was 20%, being high (20.8%) in the male children than in the female children (19%) and this difference was not statistically

Table 3: Distribution of children according to their nutritional status

Nutritional status	Gender		Total
	Female	Male	
Normal	34 (81.0)	38 (79.2)	72 (80.0)
Grade I	4 (9.5)	6 (12.5)	10 (11.1)
Grade II	2 (4.8)	4 (8.3)	06 (6.6)
Grade III	2 (4.8)	0 (0.0)	02 (2.2)
Total	42 (100)	48 (100)	90 (100)

Figures given in parentheses are percentages.

χ^2: 0.04; degrees of freedom: 1; $p = 0.83$.

Table 4: Distribution of children according to presence of signs of various vitamin and mineral deficiency

Sr. no	Presence of signs of vitamin and mineral deficiency	No. of children ($n = 90$)
1	Vitamin A	13 (14.4%)
2	Vitamin B complex	22 (24.4%)
3	Vitamin C	6 (6.7%)
4	Essential fatty acid	5 (5.6%)

Table 5: Distribution of children according to presence of signs of iron deficiency anemia

Signs	Gender		Total 90	Percentage of children
	Female (42)	Male (48)		
Pallor of tongue	26	30	56	62.2
Pallor of conjunctiva	23	28	51	56.6
Pallor of nail	26	30	56	62.2
Koilonychias	12	18	30	33.3

significant. The bulk of the malnutrition cases were grade I PEM (protein energy malnutrition) cases (55.5%) followed by grade II PEM cases (33.3%), and there were 2 (11.1%) cases of grade III malnutrition only in female children. Though this classification is based on single reading and regular monitoring of growth (weight and height) would be a better indicator, this shows that fulfillment of nutritional requirements is still a weak point of these children [Table 3]. Twenty-two (24.4%) children had signs of vitamin B complex deficiency [Table 4]. Prevalence of anemia in these children was 62.2% [Table 5].

Discussion

In this study, the overall prevalence of malnutrition was 20% and the prevalence of anemia was 62.2%. Other micronutrient deficiencies among these children need great attention and health education. Poor socioeconomic status, illiteracy, and less education among parents of these children worsen the condition. Parents also need to be addressed for healthy life of their children. In a study by Sarker et al.,[6] 14% children were underweight, 32% were stunted, and 5% children were wasted. In the study by Villamor et al.,[7] HIV infection was found to be associated with linear and ponderal growth retardation in children aged >24 months. They found that predictors of linear growth retardation include preventable conditions such as poor maternal education, child anemia, and diarrheal disease. In the study conducted by Yeung et al.,[8] prevalence of malnutrition in HIV-positive children was 57%. In the study by Sunguya et al.,[9] among the ART-treated HIV-positive children, 78 (36.6%) were stunted, 47 (22.1%) were underweight, and 29 (13.6%) were wasted. Households of ART-treated HIV-positive children showed lower economic status, lower levels of education, and higher percentages of unmarried caregivers with higher unemployment rates.

In study of Sunguya,[9] HIV-positive serostatus remained an independent risk factor for underweight and wasting in children. Although the association between HIV status and stunting was not statistically significant in their study, a higher proportion of HIV-positive children were stunted compared to those in the HIV-negative control group. Stunting, a chronic nutrition problem, typically results from more persistent factors, such as famine, chronic illnesses, lack of parental education, and poverty.[9] In the study by Anyabolu et al.,[10] the prevalence of stunting, underweight, and wasting among the HIV-infected children was 48.6%, 58.6%, and 31.4%, respectively. However, in the present study, 56.7% children belonged to social class 4 and parents of 32.7% children were illiterate. These factors may also contribute to poor nutritional status and nutritional deficiencies.

Conclusion

Poor nutritional status, hygiene, and various nutritional deficiencies among these children need great attention and health education. Basic hygiene practices must be promoted to prevent opportunistic infections in these children. There is definitely a need for well-planned, large-scale studies using standardized methodologies to estimate the prevalence of PEM, iron-deficiency-related anemia, and other micronutrient deficiencies. When planning these studies, it is necessary to ensure that importance is given to accurate evaluation of socioeconomic status and representation of the different regions of India. A comprehensive study including sociodemographic profile, anthropometric data, biochemical data, clinical signs, and dietary intake data among the same group of children will give a better insight into the situation.

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