Oral Health Related Quality of Life in Children with Hiv

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Abstract
HIV positive children are found in high numbers in developing nations. Oral manifestations are prognostic markers of HIV and are considered to be the first sign of HIV in children. With the introduction of highly active anti-retroviral therapy, a decrease in oral manifestations has been found. 30 participants from a HIV care home were included in the present study. The oral health quality of life was addressed using the oral health impact profile. The maximum mean value of 53.3 was obtained for painful gums, disturbed sleep and teeth sensitivity. Females had greater mean values for the oral conditions. it was found that when the severity of AIDS manifestations increased, patients complained of poorer status of oral symptoms which in turn affected their oral health related quality of life.

1. Introduction

The human immunodeficiency virus (HIV) infects human immunological cell, leading the host vulnerable to diverse types of antigens. Over 45 million people have been found to be affected by HIV all over the world [1]. HIV was detected in 1982 for the first time and continues to afflict children in the developing countries.[2] The immune system of pediatric patients is immature. Hence children infected with HIV are exposed to severe conditions, such as multi-systemic disease affectation and faster disease development.[3]
Oral mucosal lesions are common in children and considered to be the first manifestations of HIV-infection in pediatric patients and are considered to be prognostic markers. Children with HIV are often prescribed a continuous course of medication that have been formulated as syrups or sugared solutions and might be responsible for higher prevalence of dental caries when compared to peers who are not infected by AIDS.[4]
With the introduction of highly active anti-retroviral therapy (HAART), a decrease in oral manifestations has been found.[5] However, the oral health related quality in children (OHRQoL) has been scarcely investigated. Hence this study was undertaken to investigate the OHRQoL of children infected with HIV.

2. Materials and Methods

The study was conducted in the outpatient block of the Department of Pediatric and Preventive Dentistry in a private dental college, Chennai. A total of 30 participants were from a HIV care home were included in the study. Ethical approval was obtained from the Institutional Ethical Committee IHEC/SDC/FACULTY/22/PEDO/006. A written informed consent was obtained from the parents/ guardians of the participating children by explaining to them the need of the study.

Inclusion Criteria

Children between the age group 3-12 years diagnosed with HIV
CD4 cell count should be < 300 cells/mm3
HIV duration of 3-6 years

Exclusion Criteria

Children who were mentally and physically disabled
The oral health quality of life was addressed using the oral health impact profile (OHIP). OHIP is questionnaire which determines and measures the social impact of oral diseases which predominately affects HIV patients. The reliability of the questionnaire was validated with a Cronbach's alpha value of 0.85 in a previous study by Anup et al. The questionnaire was translated into the native language of the participants for better understanding and response. The questionnaire was divided into seven sections (functional limitations, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap). Each section contained

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two questions which define the oral health related quality of life. Each question had the following choice: Yes, No, Not applicable. The questions were slightly formatted according to the child's comprehension. The parents/ guardians assisted in obtaining responses from the younger participants. Descriptive statistics were performed to find the distribution age and gender. T test was performed to find the association among gender and quality of life. The level of significance was chosen at P<0.05.

3. Results

A total of 30 children participated in the current study which includes 17 boys and 13 girls (Table 1).		
Variable	Male n=17	Female n=13
Age 3-6 7-12	5 (39%) 12(71%)	3 (23%) 10 (77%)

Table 2 depicts the Mean of the oral difficulties experienced by the participants. The maximum mean value of 53.3 was obtained for painful gums, disturbed sleep and teeth sensitivity. Females had greater mean values for the oral conditions.

Table 2: Oral health impact profile

Questions	Males (%)	Females (%)	Total (%)	Mean	P
Trouble in pronouncing any words?	11.7	7.6	10	0.10±0.25	0.56
Have you felt that your sense of taste has worsened?	35.2	53.8	43.3	0.43±0.70	0.66
Have you had sensitive teeth with hot or cold food or drinks?	58.8	46.1	53.3	0.56±0.33	0.80
Have you had painful gums?	47.0	61.5	53.3	0.53±0.50	0.50
Have you been worried by dental problems?	11.7	30.7	20.0	0.20±0.80	0.25
Have you felt uncomfortable about appearance?	23.5	53.8	36.6	0.36±0.25	0.25
Have you been avoiding smiling?	23.5	46.1	33.3	0.33±0.65	0.70
Have you been found that your sleep has been interrupted?	52.9	53.8	53.3	0.53±0.23	0.90

4. Discussion

Pediatric HIV/AIDS is a significant cause of childhood morbidity and mortality [6]. In the year 2013, there were 3.2 million children living with HIV all over the world and 240,000 children became newly infected.[7] India has estimated 145,000 children below who are infected by HIV/AIDS, and about 22,000 new infections occur every year. Children account for 7% of all the new HIV infections [1,3,8].

HIV/AIDS may lead to the development of various oral lesions. Several studies have demonstrated that 40–50% of HIV-positive individuals have fungal, bacterial or viral infections in the oral cavity that are likely to occur early.[1-4] These oral lesions have physical, economic, social, and psychological consequences on the individuals and subsequent impairment of the oral health-related quality of life.[7,9,10]

OHRQoL has been scarcely researched in children with HIV. Insufficient dental visits or lack of interest of parents/ caregivers can be the reason for very studies to be published on OHRQoL of children with HIV. [1,3]

In the present study, it was seen that boys (11.7%) had trouble speaking compared to 7.6% of the girls. 53.8% of the girls had felt their sense of taste had worsened compared to 46.1% of the boys. 47% of boys of the boys had painful gums compared to 61. 5% females. This is contrast to most studies which state that girls have better oral health than boys. [5,6,11] A possible reason could be the higher pain threshold for boys which could have led them to give lower scores for pain. [12]

Girls were found to be more concerned about their dental problems, uncomfortable about their appearance and avoided smiling compared to boys. This is in accordance to previously published literature which states that women tend to be more dissatisfied about their appearances compared to men. [13,14] Young girls have been found to be more dissatisfied due to influence of media and peer pressure.[15]

5. Conclusion

Within the limitations of our study, it was found that when the severity of AIDS manifestations increased, patients complained of poorer status of oral symptoms which in turn affected their OHRQoL. It is important that health care professionals are able are able to identify the signs and symptoms of HIV-related oral lesions and recognize the significant role of these lesions in diagnosis and management of HIV infection.

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