SOCIAL FACTORS INFLUENCING THE GROWTH INDICATORS IN CHILDREN LIVING WITH HIV AND AIDS

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Both parents alive, loss of breadwinner of the family, widows working for children, orphaned CLHA, guardian and NGO’s taking care of CLHA, below poverty line status are some of the social factors that will have impact on growth indicators. This study was done to study these factors influence on growth indicators.

MATERIALS AND METHODS
Prospective study from April 2014 to March 2015. All children on ART. Consent was obtained. Demographic data, height and weight measured monthly. Nutritional counseling and adherence counseling was given to all CLHA and caretakers. Gain in mean weight and height were tabulated. Data were grouped with both parents alive, mother alive, father alive, both parent dead, under guardian care, under NGO or GO care, two sibling families, below and above poverty line, sibling with HIV, at least one family member earning and two family members earning. Results were analysed.

RESULTS
Subjects 212. Male:female ratio 126:86. Mean age 9.6 years. (Males 9.8 and females 9.4 years). Mean duration of ART 45.5 months. 35% had both parents alive, 38% only mother alive, 8% only father alive and 17% both parents dead. 40% of orphaned taken care by guardians, rest by NGO’s. 9 families had more than 2 siblings. 21% had no earning family members. 80% were below poverty line. Mean increase in height was 5.75cms and weight was 2.87kgs during one year. No difference in gain in height in social groups. Orphaned children taken care by NGO’s and guardians have high gain in weight. Number of earning member does not influence in gain in weight. Gain in weight in above poverty line is better than below poverty line. CLHA under father’s care gained only 2.47kgs. CLHA with mother’s care gained more weight than father’s care.

CONCLUSION
20% CLHA were orphaned and without earning member. Mothers, income of the family, NGO’s homes and guardians improve growth indicators. Both parent alive and CLHA without mother have less gain in weight. No social factors play significant role in height gain.

KEYWORDS
CLHA, Nutrition, Infections and Stata.

co-trimoxazole prophylaxis treatment of opportunistic infection and monitoring growth indicators form the integrated approach to CLHA.

Undernutrition promotes rapid progression of HIV. Early ART (antiretroviral therapy) with good nutrition can stop or even reverse this cycle of morbidity. Improvement in growth indicators is a sign of good response to ART. Fall in the growth indicators is a clinical sign of treatment failure to HAART.

Macronutrient supplementation along with treatments by government or nongovernmental organisations have not shown any significant impact in improvement of nutrition when compared with methods such as counselling.

This study was performed with a primary objective of assessing the social factors in CLHA that will influence growth indicators. Parents with HIV/AIDS have reduced family resources, functional capacity to work, earning is reduced, financial demands to cover medical treatment, threatening food supply, health financial demands to cover medical treatment, threatening food supply, health and no of siblings with HIV of all CLHA. Table 3 tabulates the parents of CLHA on ART. Table 4 shows the number of family members, earning family members and those families of CLHA who are below poverty line. Table 5 shows means of initial and final height and weight of CLHA and mean raise of weight and height of CLHA after one year. Table 6 shows the T-tests results of gain in weight and gain in height of CLHA with the mean gain in height and weight.

Mean age of the CLHA was 9.6 years. Males mean age was 9.8 years. Females mean age was 9.4 years. CLHA had an average of 45.5 months on ART.

Average number of months on ART in males was 44.9 months, while for females was 46.3 months. Only 9 families had more than 2 siblings. For others, they had less than 2 siblings.

Table 1 shows the frequency of CLHA and their care givers. Table 2 shows the number of siblings with CLHA and no of siblings with HIV of all CLHA. Table 3 tabulates the parents of CLHA on ART. Table 4 shows the number of family members, earning family members and those families of CLHA who are below poverty line. Table 5 shows means of initial and final height and weight of CLHA and mean raise of weight and height of CLHA after one year. Table 6 shows the T-tests results of gain in weight and gain in height of CLHA with the mean gain in height and weight.

### MATERIALS AND METHODS

Prospective study in a tertiary care centre in Chennai, south India, from April 2010 to March 2011.All children on ART were included. All children were below 14 years. A written consent was obtained from the parents or caregivers in a prescribed format. Measurement of the weight and height of CLHA was tabulated at every visit as per the national program. Baseline demographic data, height and weight of the children were measured every month. Nutritional counseling and adherence counseling was done to all CLHA and their care takers. Gain in the mean weight and height were tabulated for one year. The data were grouped into CLHA with both parents alive, mother alive, father alive, both parents dead, under guardian care, under home run by NGO or GO care, two sibling families, below poverty line, above poverty line, sibling with HIV, at least one family member earning and two family members earning. Results were analysed by STATA. Means of weight gain and height gain were derived and compared with the various social factors. T-tests were used to validate means with that of social factors.

### RESULTS

212 cases were registered in the study. 126 male and 86 female cases.

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**DISCUSSION**

A study at Asian level showed 25% of CLHA had both parents dead and 33% of CLHA with one parent loss. There are 25 million orphan children in India. Out of this, 2 million were CLHA. This study shows 17% of CLHA were orphaned by loss of both parents and 47% of CLHA had only one parent. Out of these children, 40% were given care by their relatives. They have difficulty in getting medical care, difficulty in adherence, psychological issues, HIV disclosure, fear of stigma and discrimination, ART therapy, adolescent development, and transition to adult HIV care. Orphanhood also puts social and financial strain on the caregivers. These guardians have to share their earning to these children along with their own family members. Food security and poverty reduction among these guardians of the CLHA reduced psychological problems in the orphans. These CLHA had aggressive, impulsive and anxious behaviours and were more likely to have learning difficulties than normal children. These orphaned CLHA had less school enrollment, poor school enrolment and more school dropouts, child labour and bad informal labour market including transactional sex and other high-risk activities than normal non-orphaned children. Apart from these psychological problems, the growth indicators of the CLHA were blunted.

The family environment of the CLHA like he being only child or having one sibling or having more than one sibling have an impact in the growth indicators. In this study, 22% had one or more siblings infected with HIV. No studies have been so far done in this aspect. 21% of the families of CLHA had both parents dead and 33% of CLHA with one parent alive, both parent dead and taken care by their relatives. They have difficulty in getting medical care, difficulty in adherence, psychological issues, HIV disclosure, fear of stigma and discrimination, ART therapy, adolescent development, and transition to adult HIV care. Orphanhood also puts social and financial strain on the caregivers. These guardians have to share their earning to these children along with their own family members. Food security and poverty reduction among these guardians of the CLHA reduced psychological problems in the orphans. These CLHA had aggressive, impulsive and anxious behaviours and were more likely to have learning difficulties than normal children. These orphaned CLHA had less school enrollment, poor school enrolment and more school dropouts, child labour and bad informal labour market including transactional sex and other high-risk activities than normal non-orphaned children. Apart from these psychological problems, the growth indicators of the CLHA were blunted.

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weight. None of the social factors studied here influenced the height gain. The CLHA with both parent alive, both parent dead and taken care in NGO homes, parent on HAART and with atleast one family member with income had more height gain than the mean gain in height.

Weight gain was more influenced with social factors. CLHA taken care in homes, CLHA of above poverty line families had more gain in weight than other children. CLHA with both parents death taken care in homes and by guardians had more gain in weight than other children. CLHA when both parents alive had less gain in weight than other children.

The study shows when both parents are alive, the gain in weight is only 2.2 kg per year. It is below the mean of the weight gain in this sample. Probable reason maybe the parents having the disease might affect the daily income. The money needed for medical care and expenses for travel also increases. The nutrition and food maybe less supplied than required.

When both parents are dead, the gain in weight is 3.97kg. These children are looked after by guardians or by NGO based homes. We see these children gain weight more. The NGO based homescare has better weight gain (4kgs with 0.01 P value). Though the guardians share the income with their family members, the extra need of money for medical care is reduced and CLHA taken care have better weight gain. The NGO’s have better funding and better knowledge on nutrition help the CLHA to have good weight gain.

When one parent is alive, we see the CLHA with mother’s care gaining more weight (3.06kgs). The CLHA under father’s care only 2.47kgs gained. The reasons maybe the father affected early and more chances of opportunistic infections, less income due to illness, other alcohol and substance abuse more with men and travel might reduce the spending on food.

The weight gain in CLHA who are above poverty line is more than mean of weight gain. We see the gain in weight in above poverty line is better than below poverty line CLHA.

The number of earning member of the family one or two does not influence any difference in gain in weight. We see the weight gain is almost equal to mean gain in weight.

CONCLUSION
One fifth of CLHA are orphaned and without earning member in the family. Mothers, income of the family, NGO’s homes and guardians play a better role in improving growth indicators. When both parents alive and CLHA without mother have negative impact in gain in weight. No social factors play significant role in height gain.

REFERENCES