Research Article

Morbidity profile of children residing in orphanages - A cross-sectional study in Chitradurga, Karnataka

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ABSTRACT

Background: Orphans and vulnerable children (OVC) are a group of underprivileged population in society. They do not receive proper physical and emotional care because they are unaccompanied, displaced, and lacking family support. An orphanage is an institution devoted to the care and education of orphans, abused, abandoned, and neglected children, i.e., children whose parents are deceased or unable to care for them. Children who live in orphanage unfortunately suffer from anemia, malnutrition, and environmental deprivation of varying degrees. Therefore, there is a need to address the special needs of this vulnerable group. **Objectives**: This study was conducted with the objective to assess the morbidities among OVC and its association with the duration of stay in the orphanage. **Materials and Methods:** A cross-sectional institution-based study was conducted among 297 orphanage children aged between 6 and 16 years for 1 year. **Results:** The mean age of study participants was 12.15 ± 2.5 years. The leading morbidities observed were anemia (37.4%), skin problems (35.5%), dental problems (28.3%), malnutrition (23.2%), scalp problems (12.9%), ear problems (11.6%), upper respiratory problems (5.7%), and eye problems (3.9%). There was very high significant association between the duration of stay and the presence of medical illness in the orphanage children ($P = 0.000$). **Conclusions:** Anemia, skin infections, dental problems, and malnutrition are the common health problems in them. Repeated infection and protein energy malnutrition significantly contributed to high prevalence of anemia. It was also observed that longer the duration of stay in orphanage, the children were more prone to infections. Despite these children are very vulnerable, their health needs are poorly understood and ill served.

KEY WORDS: Orphans and Vulnerable Children; Orphanage; Morbidities

INTRODUCTION

This study is based on the premise that family life is basic to the wholesome development of children. The family is a powerful determinant of child's emotional and physical development, because of the love, warmth, security, attention, acceptance, happiness, and discipline it provides, which are essential prerequisites for the growth of a child.

The number of vulnerable children is on the rise due to various societal and economic factors. The basic human rights of these children are violated and severely threatened. The future might look bleak for these children as long as they do not receive social support. The community needs to nurture its own children since "nurturing is an important component of any child's growth and thus it is important to meet the psychosocial needs of children." Children, particularly orphans, are the most underprivileged groups in

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each society. The reason being that "there are few support systems outside the family for them." Usually, orphans are emotionally deprived, financially challenged and desperate.[1]

According to United Nations Children's Fund, the definition of an orphan is anyone between the ages of 0 and 17 years who has lost at least one parent or both the parents.[2] The number of orphans is increasing daily. HIV remains a global health problem of unprecedented dimensions. There are around 153 million orphans worldwide; in this, 16.6 million orphans are due to AIDS.[3] According to national family health survey-3, 17.3% of the total children in India and 15.3% in Karnataka are orphans.[4] Moreover, it would be difficult to estimate the number of children who are abandoned, neglected, deprived of parental or family care due to innumerable other reasons such as family feud, parental desertion, illegitimate pregnancy, and natural disasters. A large proportion of delinquent and neglected children come from broken homes, desertion, divorce, illegitimacy, cruelty, drunkenness, drug abuse by the parents, parental loss, and emerging causes such as AIDS, natural calamities, and refugee.[5] Orphanhood is frequently accompanied with multidimensional problems including prejudice, reduced access to health and school services, inadequate food, sexual abuse, and others.[6]

In traditional societies, care of the orphaned and the destitute child used to be the responsibility of either a joint family or caste group of the child. However, due to host of adverse social and economic factors, more and more of such children nowadays are seeking admission in institutions organized by the state or voluntary agencies for obtaining food, shelter, and to some extent education - the basic necessities of life. A steady rise in the numbers of such establishments over the past few decades, if anything, is an indication that the burden of caring for, the destitute children in India, in future, is likely to be more on the state and organized social sectors.[7]

Orphanages are part of every societal culture. An orphanage is an institution devoted to the care and education of orphans, abused, abandoned, and neglected children, i.e., children whose parents are deceased or unable to care for them. Unfortunately, children living in such institutions face a wide variety of problems such as infectious morbidity, nutrition and growth, cognitive development, socio-affective development, and physical abuses.[8] Hence, there is a need to address the special needs of this vulnerable group. Very few studies have been conducted at national and international level on health problems of orphans and vulnerable children (OVC) in orphanage. Therefore, the present study was undertaken with an objective to assess the morbidities among OVC and its association with the duration of stay in the orphanage.

MATERIALS AND METHODS

A cross-sectional institution-based survey was conducted in all the orphanages registered with the Department of Women and Child Welfare, Chitradurga. Data were collected for 1 year. The study population consists of children in the age group of 6-16 years residing in orphanages. A total of 297 children who were available at the time of examination were included in the study. Content validity was conducted by submission of the questionnaires, the title and the objectives of the study to a panel of experts. Questionnaires were modified according to the feedback obtained from them. Pilot study was conducted before starting data collection to identify problems in the research design, validity of the study, and final modifications were made after the pilot study. After taking institutional ethical clearance, various orphanages were visited. Those who have given permission, we have included them in this study.

A detailed general physical examination from head to toe followed by systematic examination was carried out to assess the various morbidities of every child. Nutritional status was assessed by using anthropometric measurements including weight, height, and body mass index (BMI). The anthropometrical measurements were plotted in WHO growth charts for assessment of nutritional status of children.[9] The nutritional anemia was assessed by using WHO criteria (De-Meyers).[10] The general information regarding infrastructure, sanitation, and recreational facilities provided by the orphanage were also assessed.

Health education sessions about food hygiene and personal hygiene were conducted for caretakers and children in all orphanages. Awareness sessions on healthy eating patterns were carried out aiming to reduce the prevalence of malnutrition, their consequences, and risk factors associated. Children were also trained to perform adequate hand washing.

Survey data entry and analysis was done by using SPSS Package version 18. Simple proportions, mean, standard deviation, and Chi-square test were used. Chi-square test was used to find out the association between two attributes. $P < 0.05$ is considered statistically significant.

RESULTS

In our study, the majority of children were between the ages of 12 and 16 years (68.3%) followed by 6-12 years (31.6%). The mean age of study participants was 12.15 ± 2.5 years. Most of the children were males (80.5%) and Hindu by religion (83%). Almost 55% of the children were paternal orphans, entered orphanage after 5 years. The main reason for children taking admission into orphanage was economical causes (62.6%) such as poverty followed by social causes (29.0%) such as death or illness of a parent, single parent, broken family, and marital disharmony. The majority of the children (39.7%) were staying for 1-3 years followed by <1 year (29.3%), and some were above 3 years (18.2%). More than 70% of the children were going to government schools (62%) (Table 1).

In this study, the leading morbidities observed that 35.5% of the children were having skin problems (scabies, hypopigmented patches over the face, rashes, and infectious wounds), 28.3% were having dental problems (dental caries, fluorosis), 12.9% were having scalp problems (dandruff, pediculosis), 11.6% were having ear problems (wax, ear discharge), 5.7% were having upper respiratory problems (DNS, polyp, congestion), 3.9% were having eye problems (refractive error, bitot spots), and 2.3% were having other problems (pain abdomen, dysmenorrhea) (Table 2).

The prevalence of anemia in children was 37.4% whereas in majority, i.e., 21.5% had mild anemia, 13.5% had moderate anemia, and only 2.4% were severely anemic.

According to the WHO Growth Chart, the weight of 32.2% of children, the height of 51.9% of children, and the BMI of 23.2% of children were less than the 3rd centile for their age and sex suggestive of these children are underweight, stunted, and wasted, respectively (Table 3).

The present study shows statistically very high significant association between the duration of stay and the presence of medical illness in the orphanage children ($P = 0.000$). Longer the duration of stay in orphanage, the children were more prone to medical illness (Table 4).

Table 1: Sociodemographic characteristics of study participants

Characteristics	*n* (%)
Age	
6-12	94 (31.6)
12-16	203 (68.3)
Sex	
Males	246 (80.5)
Females	45 (19.5)
Religion	
Hindu	246 (83)
Muslim	45 (15)
Christian	6 (2)
Type of orphans	
Maternal orphans	46 (26.7)
Paternal orphans	95 (55.2)
Double orphans	31 (18.0)
Reason for admission	
Social	86 (29.0)
Economical	186 (62.6)
Both	25 (8.4)
Duration of stay	
<1 year	87 (29.3)
1-3 years	118 (39.7)
>3 years	92 (18.2)
Place of study	
Orphanage	53 (17.8)
Government	184 (62.0)
Government aided	24 (8.1)
Private	36 (12.1)

Table 2: Distribution of respondents according to leading morbidities

Morbidity status	*n* (%)
Skin problems	138 (35.5)
Dental problems	110 (28.3)
Scalp problems	50 (12.9)
Ear problems	45 (11.6)
Upper respiratory problems	22 (5.7)
Eye problems	15 (3.9)
Other problems	9 (2.3)
Total	389 (100)

DISCUSSION

In our study, 35.5% of the children were having skin problems (scabies, hypopigmented patches over the face, rashes, and infectious wounds), 28.3% were having dental problems (dental caries, fluorosis), 12.9% were having scalp problems (dandruff, pediculosis), 11.6% were having ear problems (wax, ear discharge), 5.7% were having upper respiratory problems (DNS, polyp, congestion), 3.9% were having eye problems (refractive error, bitot spots), and 2.3% were having other problems (pain abdomen, dysmenorrhea). The prevalence of anemia was 37.4%. According to the WHO growth chart in our study, the weight of 32.2% of children, the height of 51.9% of children, and the (BMI) of 23.2% of children were less than the 3rd centile for their age and sex suggestive of these children are underweight, stunted, and wasted, respectively. The present study shows statistically very high significant association between the duration of stay and the presence of medical illness in the orphanage children ($P = 0.000$). Longer the duration of stay in orphanage, the children were more prone to medical illness.

Some studies showed similar findings with respect to leading morbidities in orphanages. A study conducted by Chabra et al. among children in observation home in Delhi, found that skin disease was the most common morbidity (31.7%), followed by disease of the oral cavity (16%), acute respiratory infection (8.6%), and disease of the ear (9.9%).[11] In a study conducted by Shukla and Shukla among 104 orphanage children in Salem, Chennai, the majority of the children were having skin diseases such as skin patches (3.84%), rashes (1.96%), and infectious wounds (7.7%).[12] Karim et al. conducted a study in an orphanage in Dhaka, found that 98% children had skin problems such as scabies.[13] Muralidharan et al. in their

Table 3: Distribution of respondents according to nutritional status

Nutrition status	*n* (%)
Underweight	96 (32.3)
Stunted	154 (51.9)
Wasted	27 (23.2)

Table 4: Association between the duration of stay and the presence of medical illness in the orphanage children

Duration of stay	Medical illness		Total (%)
	Nil infection (%)	Infection (%)	
<1 year	31 (10.4)	56 (18.9)	87 (29.3)
1-3 years	63 (21.1)	55 (18.5)	118 (39.7)
>3 years	19 (6.4)	73 (24.6)	92 (31.0)
Total	113 (38.0)	184 (62.0)	297 (100.0)

χ^2: 23.810, d.f: 2, P=0.000

study on oral health status of children in orphanage found that dental caries is most common in them (58.37%).[14] Major reasons for skin infections in our study were due to irregular bathing practices, poor personal hygiene of the children, and overcrowding in most of the orphanages.

Similar to our study, a study conducted by Sadik among 40 children, 22 boys and 18 girls, aged 2-18 years to assess nutritional status found that 10% and 15% of the children were severely stunted and wasted, respectively.[15] Another study conducted by Ganga et al. on 225 children in Thanjavur Observation Home observed that 28% of the children were undernourished.[16] In our study, the prevalence of anemia in children was 37.4%. In contrast to this, some studies conducted by Miller and Hendrie[17] Sanou et al.[18] in Burkina-Faso found the prevalence of anemia was 35% and 60%, respectively. These differences in the prevalence of anemia may be due to the difference in the study area. These findings suggest that infection and protein energy malnutrition significantly contributed to the prevalence of anemia. In a study conducted by Balakrishna, the children who stayed for a longer duration in the orphanage were more prone to infectious illness with $P < 0.05$.[19] Similar findings were observed in this study. Although the physical infrastructure in the majority of the orphanages was adequate, some of the amenities such as bathrooms and toilet facilities were inadequate. Similar findings were also noted in a study conducted by Horwitz[20]

CONCLUSION

Anemia, skin infections, dental problems, scalp problems, respiratory problems, and malnutrition are the common health problems in them. Repeated infection and protein energy malnutrition significantly contributed to high prevalence of anemia. It was also observed that longer the duration of stay in orphanage, the children were more prone to infections. Despite these children are very vulnerable, their health needs are poorly understood and ill served. In view of greater incidence of infectious illness and malnutrition, periodic health checkup of the orphanage children must be done by the medical officers, teachers, and caretakers of the orphanage. Awareness sessions for caretakers on healthy eating patterns should be carried out aiming to reduce the prevalence of malnutrition, their consequences, and risk factors associated, and formal training should be given in how to recognize their health problems, to treat minor alignments, and to consult specialist whenever needed.

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