

# Oral Health Knowledge, Attitude and Practices of Children and Adolescents of Orphanages in Jodhpur City Rajasthan, India

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## ABSTRACT

**Objectives:** This study had twin objectives of assessing the oral health knowledge, attitude and practices and to assess the dental caries status and treatment needs among the orphan children of orphanages of Jodhpur city, Rajasthan, India.

**Materials and Methods:** This cross-sectional study was carried out on 100 children to assess the oral health knowledge, attitude and practices of children and adolescents of orphanages in Jodhpur city, Rajasthan, India. The data was collected on a pre-tested questionnaire which included 20 closed ended multiple-choice questions on perceived oral health status, knowledge of oral health and attitude, oral health practices, dietary habits and behaviour towards dental treatment. On completion of the questionnaire, each child underwent an oral examination and

Dentition status and treatment needs index (WHO Oral Health Surveys- 1997) was recorded for each subject.

**Results:** Almost 93% of the children felt the necessity of maintaining oral hygiene. There were 69% of the children who believed that it was necessary to brush teeth after every meal, 51% children believed that regular tooth-brushing prevents all tooth problems and 93% children knew that tobacco is carcinogenic in nature. Also, it was found that 77% of the children believed that regular dental visits help in maintaining oral hygiene.

**Conclusion:** Many of them had acquired knowledge on oral health. More than half of the study subjects were aware of the importance of keeping good oral hygiene, regular dental visits and harmful effects of tobacco.

**Keywords:** Dental caries, Oral health, Tobacco

## INTRODUCTION

The orphans are the ones who have lost both their parents and are socially and economically deprived. They have been sympathized with, ignored, vitrified or even hidden away in the community [1]. India is the second most populated country in the world with an estimated population of over 1.2 billion. Although the exact number of orphans is unknown, the gravity of the situation can be assessed by the fact that the population of orphans in India is about 2 million [1].

Profound disparities exist in oral health status across different socioeconomic divisions. The pattern of orphanage living is quite different from family living as the latter provides physical security, food, and shelter but is devoid of psychological security [2]. Being an orphan is one of the most important predictor of poor oral health as these children rarely get an opportunity to seek dental care [3].

High prevalence of dental caries, gingivitis and dental trauma has been observed in children of orphanages. This has been attributed to overcrowding, lack of adequate staff, poor oral hygiene and improper nutrition. Untreated oral diseases could lead to general health problems, pain, interference in eating, loss in school time and also social unacceptability. Recognition of these problems is essential to provide optimum oral health for these deprived children [4].

The knowledge is usually derived from information. Information when believed becomes an action and the outcome of the action is behaviour. However, only a weak relation exists between knowledge and behaviour. There are reports that there is an association between increased knowledge and better oral health [5].

It is the primary concern of oral health educators to impart a positive oral health knowledge and behaviour in the society. The first step in establishing a habit is to provide relevant knowledge to the patients and to raise their awareness of how to prevent oral diseases [6].

Hence, this study was taken up with the objective of assessing the oral health knowledge, attitude and practices and to assess the dental caries status and treatment needs among the orphan children of orphanages of Jodhpur city, Rajasthan, India.

## MATERIALS AND METHODS

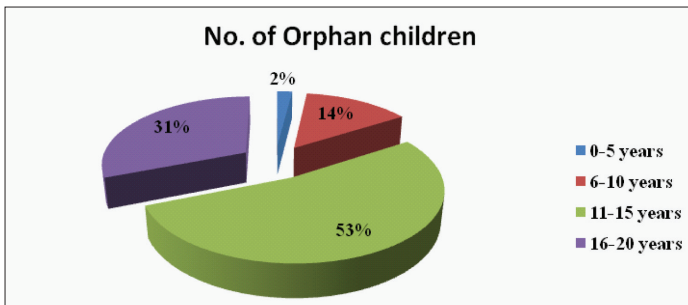
**Methodology:** A cross-sectional study was conducted in the orphanages of Jodhpur city, Rajasthan, for a period of two days in the month of March 2013. Ethical approval was taken from the ethical committee of Vyas Dental College and Hospital. A permission and informed consent was taken from the orphanage authorities to carry out the study.

**Study Population** – A total of 100 children aged 4 to 19 y resided in two orphanages and all of them were taken as the study population for this study.

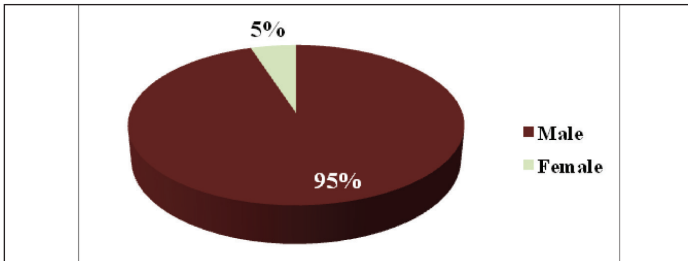
**Collection of Data:** The data was collected on a pre-tested questionnaire which included 20 closed ended multiple-choice questions. A pre-tested and validated questionnaire contained questions regarding the perceived oral health status, knowledge of oral health and attitude, oral health practices, dietary habits and behaviour towards dental treatment. The children received a full explanation of how to fill in the questionnaire.

Furthermore, the examiner was always available during the completion of the questionnaire and the participants were encouraged to approach the examiner, when they needed to clarify at any point. The questionnaire was read out in local language by the examiner to enable the children to respond to the same. The very young children took the help of their warden to complete the questionnaire.

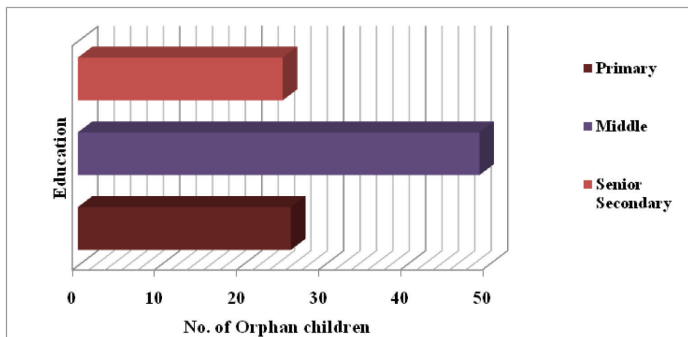
On completion of the questionnaire, each child underwent an oral examination. The examiner carried out the examination and the data was recorded by a recorder. Children were asked to sit



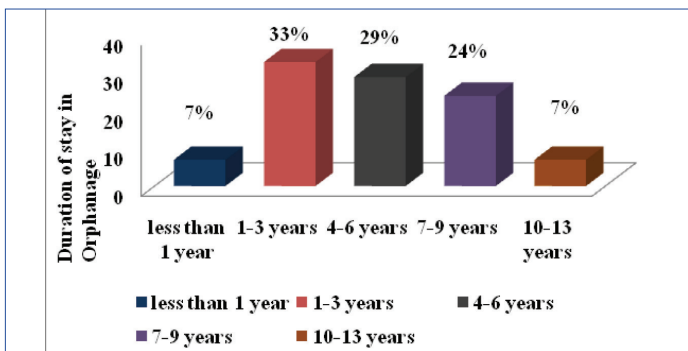
[Table/Fig--1]: Age distribution of orphan children



[Table/Fig-2]: Sex distribution of orphan children



[Table/Fig-3]: Education wise distribution of Orphan children



[Table/Fig-4]: Distribution of orphan children according to their duration of stay in the orphanage

comfortably on an ordinary chair with backrest in a well-illuminated and ventilated hall. The clinical examination was carried out using sterilized instruments (mouth mirror and explorer) by a single calibrated examiner (K- value – 0.82). Dentition status and treatment needs index (WHO Oral Health Surveys- 1997) was recorded for each subject.

## RESULTS

The [Table/Fig-1] describes the demographic characteristics of the orphan children and [Table/Fig-2] describes the sex- wise distribution of the orphan children. The distribution of children on the basis of their level of education is given in [Table/Fig-3] and the distribution of children on the basis of their duration of stay is given in [Table/Fig-4]. All the children were school- going and were not physically handicapped.

The questionnaire results were split up into three sections as knowledge of oral health, Attitude and oral health practices given in the [Table/Fig-5-7] respectively.

Questions	Frequency of Responses (Percentage)		
	Yes	No	Don't Know
Is it necessary to maintain your oral hygiene?	93%	7%	0%
Is it necessary to brush your teeth after every meal?	69%	25%	6%
Does regular tooth-brushing prevent all tooth problems?	51%	44%	5%
Does tobacco use cause cancer?	93%	6%	1%
Does regular dental visit maintains oral hygiene?	77%	15%	8%

[Table/Fig-5]: Distribution of orphan children according to their knowledge

Questions	Frequency of Responses (Percentage)		
	Yes	No	Don't Know
Are you satisfied with your teeth appearance?	57%	35%	8%
Do you feel the need to visit dentist?	88%	12%	0%
Do you avoid dental visits because of fear of pain?	53%	42%	5%
	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
What others feel about your oral health?	46%	45%	9%
	<b>Dentist</b>	<b>Pharmacist</b>	<b>Others</b>
Whom do you consult for your tooth problems?	67%	14%	19%

[Table/Fig-6]: Distribution of orphan children according to their attitude

[Table/Fig-8] describes the need for treatment among the orphans in relation to, decayed teeth and missing teeth.

## DISCUSSION

The results of this cross-sectional study on children of orphanages provides a unique opportunity to analyse the knowledge, attitude and practices and the dental caries status in this left out population of society. There have been very few studies carried out on the oral health status of orphan children which indicates that the oral health status of these children is poor and there is a special need of care [7-9].

### Knowledge Of Oral Health Practices Amongst Orphan Children

In the present study, it was revealed that there were 93% of the children who found it necessary to maintain their oral hygiene, 69% of the children found it necessary to brush their teeth after every meal, 51% of the children believed that regular tooth-brushing could prevent all tooth problems and 77% of the children believed that with regular dental visits, oral hygiene can be maintained. This probably could be due to the reason that in the present study, all the children were provided with education facilities and hence, the awareness amongst children was high. These results were in agreement with the study carried out by Arun Kumar et al., in which 86.3% of the children felt the need to maintain their oral hygiene, 58% of the children believed in brushing of teeth after every meal, 57.7% of the children felt that regular tooth brushing can prevent all tooth problems and 69.2% of the children agreed on the fact that regular dental check-ups can prevent oral health problems [5]. However, contradictory results were found in the study carried out by Sushant et al., in which only 26.5% of the children believed in importance of maintaining oral hygiene [4].

It was found that 93% of the children were aware of the fact that tobacco causes cancer. This finding of the study was in agreement with that of Arun Kumar et al where almost 70% of the children knew that smoking causes cancer [5]. This may be probably due to the reason that in the present study, all the study subjects were exposed to some level of education.

Questions	Frequency of Responses (Percentage)		
	Yes	No	Don't Know
	Once	Twice/More	Never
	<b>Toothbrush+ Toothpaste</b>	<b>Finger+ Toothpaste</b>	<b>Neem- Stick And Others</b>
How do you brush your teeth?	82%	18%	0%
	Yes	No	
Use of any other material other than toothbrush to clean your teeth?	47%	53%	
	<b>Within 6 Months</b>	<b>6-12 Months</b>	<b>Never</b>
How often you change your toothbrush?	70%	23%	7%
	Yes	No	Don't Know
Do you rinse your mouth with water after every meal?	80%	14%	6%
	1-2 Times	More Than 2 Times	Never
How many times you snack per day?	47%	14%	39%
	<b>Once In A Day</b>	<b>More Than Once In A Day</b>	<b>Occasionally</b>
How often do you eat sweets?	26%	9%	65%
	<b>Yes</b>	<b>No</b>	<b>Occasionally</b>
How often do you have soft drinks?	11%	4%	85%
Do you have habit of eating snacks between meals?	26%	9%	65%
	<b>Often</b>	<b>Occasionally</b>	<b>Never</b>
How often you visit a dentist?	26%	41%	33%

**[Table/Fig-7]:** Distribution of orphan children according to their practice

### Attitude of orphan children towards oral health practices

There were 57% of the children who were satisfied with their teeth appearance and almost 46% children answered that others have complemented them for their good oral health. This finding of the study is in agreement with that of the study by Arun Kumar et al., in which 50.5% of the children were satisfied with their teeth appearance and 60% of the children were being complemented by others for maintaining good oral health [5].

In the present study, 88% of the children felt the need to visit a dentist and 53% of the children avoided dental visits because of fear of pain. Similar results were found in the study conducted by Baranya Shrikrishna Suprabha et al., in which majority of the children were having low knowledge as well as they were afraid of visiting the dentist and perceived dental appointments as unpleasant [7]. However, contradictory results were found by Arun Kumar et al., study on which 36.7% of the children avoided dental visits due to fear of pain and only 21.2% of the children felt the need of dental visits [5].

In the present study, almost 67% of the children consulted a dentist (rather than a pharmacist or others) for their tooth problems. This finding of the study was in agreement to that of Arun Kumar et al., study, in which 76.1% of the children consulted a dentist (rather than a pharmacist or others) for their tooth problems [5]. There were 26% of children who visited dentist regularly, 41% children had visited dentist occasionally and 33% children had never visited any dentist. This could be probably due to lack of perceived need for regular dental check-ups. The finding of the study was in agreement to the study carried out by Lonim Prasai Dixit et al., in which a very

Variables	Orphan Children (Mean + Standard Deviation)
Dental Caries Status (DMFT)	1.40+1.78
Treatment Needs	
Decayed	0.50 +0.50
Missing	0.24+0.90

**[Table/Fig-8]:** Distribution of Orphan Children according to their Dental Caries Status and Treatment Needs

low dental visit was observed amongst the orphan children [8]. However, this finding was contradicted by the study of Arun Kumar et al., in which 76.1% of the children visited a dentist for their tooth problems [5].

### Oral health practices of orphan children

It was found that 82% of the children used toothbrush and toothpaste for cleaning their teeth and 70% of the children had the habit of changing their toothbrush within 6 mnth. This finding of the study was similar to that of Arun Kumar et al., in which 90.8% of the children used toothbrush and toothpaste to clean their teeth [5]. However, regarding the change of toothbrush, contradictory results were found in which 70.9% of the children changed their toothbrush within 1-3 mnth. In a study carried out by Lonim Prasai Dixit et al., it was found out that the most common aide used for maintaining oral hygiene was toothbrush and toothpaste amongst the orphan children [8].

In the present study, there were 53% of the children who were not using any other tooth cleaning aide other than a toothbrush and 80% of the children regularly rinsed their mouth with water after every meal. The results were in agreement with the study carried out by Arun Kumar et al., and Lonim Prasai Dixit et al., in which 75.3% of the children were not using any other teeth cleaning aide other than a toothbrush and 80% of the children rinsed their mouth with water after every meal respectively [5,8]. Whereas, studies carried out by Baranya Shrikrishna Suprabha et al., Vikram Khare et al., and Sushanth VH et al., a majority of the study population exhibited lack of awareness regarding use of fluoride, use of dental floss, and other tooth cleaning aides which were in contrast with the present study [4,7,9].

### Dietary habits

Almost 61% of the children were found to snack each day, 65% of the children consumed sweets occasionally and 26% of the children had the habit of snacking between meals. Similar finding was found by Arun Kumar et al., in which majority of children were found with the habit of snacking each day and 26% of the children had the habit of snacking between meals [5]. This finding of the study was not in agreement with the study carried out by Lonim Prasai Dixit et al., in which 75% of the children consumed sugar rich foods once daily [8].

There were 85% children who consumed aerated soft drinks occasionally. This finding of the study was in agreement with that of Lonim Prasai Dixit et al., in which a majority of study subjects consumed soft drinks occasionally [8]. However, dissimilar results were found by Arun Kumar et al., in which 23.6% of the study subjects consumed aerated soft drinks occasionally [5].

### Dental caries status

The mean dental caries status of the study subjects was found out to be 1.40 (SD= 1.78) in the present study. This finding was similar to the study carried out by Vikram Khare et al., in which the mean number of decayed teeth were found out to be 1.16 (SD= 1.145), the prevalence of dental caries indicates that there is no expressed need for restorative and preventive care [9].

Among treatment needs, the mean number of teeth requiring restorative dental care was 0.5 (SD= 0.50) and the mean number of missing teeth (due to caries) was 0.24 (SD= 0.90). High need of restorative and preventive treatment amongst orphan children has been highlighted in all the studies [2-9].

## LIMITATIONS

The information on oral health knowledge, attitudes, and practices was collected by means of a questionnaire. Though close-ended questions are easier to analyse statistically, they have their own limitations [10].

## CONCLUSION

The present study was conducted among school going orphans. Many of them had acquired knowledge on oral health. More than half of the study subjects were aware of the importance of keeping good oral hygiene, regular dental visits and harmful effects of tobacco.

It was found out that a majority of children felt the need to visit a dentist. Almost 53% avoided the same due to fear of pain. Very few children had visited a dentist for their oral health problems. This could be due to lack of perceived need for restorative and preventive treatment.

Tooth paste and tooth brush were used as a measure of oral hygiene practices by most of the children. The mean dental caries status of the study subjects was found out to be 1.40 (SD= 1.78) and majority of the subjects needed treatment for decayed teeth.

## RECOMMENDATIONS

In a resource- limited country like India, innovative programmes organized by dental colleges can contribute in improving the oral health of underprivileged children. Incorporation of Oral health orientation program in the school education curriculum could bring changes in oral health behaviour and knowledge.

In a cross-sectional study like this, the cause of dental caries cannot be easily determined. Longitudinal studies are recommended in the future to study the influence of oral health knowledge, attitude and practices on oral health status.

## CLINICAL SIGNIFICANCE

Children in orphanages are a neglected segment of our society. They face certain emotional, social and psychological distress which affects their general as well as oral health. An effort has been made to throw some light on unattended oral health problems in orphanages. By spreading oral health education, an upliftment of this segment of the society can be done.

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