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Awareness of Oral Health in Adults with Congenital Heart Disease

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Abstract

Congenital heart disease (CHD) is a significant health condition that can affect various aspects of a person's life including oral health. There is limited information on the awareness of oral health among adults with CHD, especially in rural areas of Darbhanga, Bihar. This study aims to evaluate the awareness and practices related to oral health in adults with CHD. A retrospective study was conducted over one year at clinics of cardiologist in Darbhanga, Bihar. The sample consisted of 30 adults diagnosed with congenital heart disease. Data were collected from medical records and through a structured questionnaire focusing on demographic details, oral hygiene practices, frequency of dental visits, and knowledge about the link between oral health and CHD. The data were analyzed using descriptive statistics. Out of the 30 participants, 60% were male and 40% were female, with a mean age of 35 years. The study found that 70% of the participants were aware of the importance of oral health, but only 40% practiced regular oral hygiene. About 50% of the participants visited a dentist at least once a year, while the remaining 50% had not visited a dentist in the past five years. Furthermore, only 30% of the participants were aware of the potential impact of poor oral health on their heart condition. Statistical analysis showed a significant correlation between higher levels of education and better oral health awareness and practices. The study reveals a moderate level of awareness about oral health among adults with congenital heart disease in Darbhanga, Bihar. However, there is a gap between awareness and practice, highlighting the need for targeted oral health education and intervention programs for this population. Improving oral health awareness and practices can potentially reduce the risk of complications associated with CHD.

INTRODUCTION

Congenital heart disease (CHD) is one of the most common congenital anomalies, affecting approximately 8 per 1,000 live births worldwide^[1]. Advances in medical and surgical interventions have significantly improved the life expectancy of individuals with CHD, allowing many to reach adulthood^[2]. However, adults with CHD remain at risk for various complications, including those related to oral health. Poor oral hygiene has been associated with an increased risk of infective endocarditis, a potentially life-threatening condition for individuals with CHD^[3].

Despite the recognized importance of oral health, studies have shown that individuals with CHD often have inadequate knowledge and poor oral hygiene practices^[4]. Factors contributing to this include a lack of awareness about the relationship between oral health and cardiac health, limited access to dental care and the prioritization of cardiac care over dental health^[5]. This gap in knowledge and practice underscores the need for targeted educational interventions to improve oral health outcomes in this vulnerable population^[6].

In India, particularly in rural areas of Darbhanga, Bihar, the awareness and practices related to oral health among adults with CHD have not been extensively studied. Rural populations often face additional challenges such as lower educational levels, limited access to healthcare facilities, and economic constraints, which can further impact oral health^[7]. Understanding the current level of awareness and practices in this specific population is crucial for developing effective health promotion strategies. This retrospective study aims to evaluate the awareness of oral health and related practices among adults with CHD in Darbhanga, Bihar. By identifying the gaps in knowledge and behavior, this study seeks to inform the development of tailored interventions to improve oral health and prevent complications in this high-risk group.

MATERIALS AND METHODS

Study Design: This retrospective study was conducted over a period of one year at clinics of cardiologist in Darbhanga, Bihar. The study aimed to evaluate the awareness and practices related to oral health among adults with congenital heart disease (CHD).

Study Population: The study population consisted of 30 adults diagnosed with congenital heart disease. Inclusion criteria were adults aged 18 years and above, diagnosed with any type of CHD and receiving care at the clinics of cardiologist in Darbhanga. Exclusion criteria included individuals with cognitive impairments that would prevent reliable self-reporting and those

who had not attended the clinics of cardiologist during the study period.

Data Collection: Data were collected from the medical records of the participants and through a structured questionnaire. The questionnaire was designed to gather information on demographic details, oral hygiene practices, frequency of dental visits and knowledge about the link between oral health and CHD.

Demographic Details: Age, gender, education level, and socioeconomic status.

Oral Hygiene Practices: Frequency of brushing, use of dental floss and use of mouthwash.

Dental visits: Frequency of dental visits in the past year and reasons for visiting or not visiting a dentist.

Oral Health Knowledge: Awareness of the relationship between oral health and CHD and knowledge of the risk of infective endocarditis due to poor oral hygiene. Data were analyzed using descriptive statistics. Categorical variables were summarized as frequencies and percentages, while continuous variables were summarized as means and standard deviations. The relationship between demographic variables and oral health awareness and practices was analyzed using chi-square tests and t-tests where appropriate. A $p < 0.05$ was considered statistically significant.

Out of the 30 participants, 60% were male and 40% were female, with a mean age of 35 years. Detailed results on oral hygiene practices, frequency of dental visits and awareness levels are presented in the Results section.

RESULTS AND DISCUSSIONS

Demographic Characteristics: The study included 30 adults with congenital heart disease, comprising 18 males (60%) and 12 females (40%). The mean age of the participants was 35 years (SD = 10). The education level and socioeconomic status of the participants are summarized in Table 1.

Oral Hygiene Practices: The oral hygiene practices of the participants are presented in Table 2. A majority of participants (70%) reported brushing their teeth once a day, while only 30% brushed twice a day. The use of dental floss and mouthwash was notably low, with only 10% using dental floss and 20% using mouthwash regularly.

Frequency of Dental Visits: The frequency of dental visits among participants is detailed in Table 3. About

Table 1: status of the participants are summarized

Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	18	60
Female	12	40
Education Level		
Primary Education	8	26.7
Secondary Education	12	40
Higher Secondary Education	6	20
Graduate and Above	4	13.3
Socioeconomic Status		
Low	10	33.3
Middle	15	50
High	5	16.7

Table 2: The oral hygiene practices of the participants are presented

Oral Hygiene Practice	Frequency (n)	Percentage (%)
Frequency of Brushing		
Once a Day	21	70
Twice a Day	9	30
Use of Dental Floss		
Yes	3	10
No	27	90
Use of Mouthwash		
Yes	6	20
No	24	80

Table 3: The frequency of dental visits among participants is detailed

Frequency of Dental Visits	Frequency (n)	Percentage (%)
Visited in Past Year		
Yes	15	50
No	15	50
Last Visit		
Within the Past Year	15	50
1-2 Years Ago	5	16.7
3-5 Years Ago	4	13.3
>5 Years Ago	6	20

Table 4: the relationship between oral health and congenital heart disease among participants is summarized

Awareness	Frequency (n)	Percentage (%)
General Importance of Oral Health		
Yes	21	70
No	9	30
Link Between Oral Health and CHD		
Yes	9	30
No	21	70

50% of the participants reported visiting a dentist at least once in the past year, whereas the other 50% had not visited a dentist in the past five years.

Awareness of Oral Health and CHD: The awareness of the relationship between oral health and congenital heart disease among participants is summarized in Table 4. While 70% of participants were aware of the general importance of oral health, only 30% knew about the specific risks of infective endocarditis associated with poor oral hygiene.

Statistical analysis revealed a significant correlation between higher levels of education and better oral health awareness and practices ($p < 0.05$). Participants

with higher education levels were more likely to brush their teeth twice a day and visit a dentist regularly.

This study highlights a moderate level of awareness regarding oral health among adults with congenital heart disease in Darbhanga, Bihar. There is a noticeable gap between awareness and practice,

suggesting the need for targeted educational and intervention programs to enhance oral health outcomes in this population.

The present study aimed to evaluate the awareness and practices related to oral health among adults with congenital heart disease (CHD) in Darbhanga, Bihar. The findings reveal a moderate level of awareness but significant gaps in oral hygiene practices and dental care utilization.

Despite 70% of participants acknowledging the importance of oral health, only 30% practiced brushing their teeth twice a day and the use of dental floss and mouthwash was particularly low. This discrepancy between awareness and practice is consistent with previous studies, which have shown that knowledge alone does not necessarily translate into appropriate health behaviors^[1,2]. For instance, Nagarajan *et al.* reported similar findings in children with CHD, where high awareness did not equate to better oral hygiene practices^[3].

The study found that half of the participants had not visited a dentist in the past five years, underscoring

significant barriers to dental care access. These barriers may include socioeconomic constraints, fear of dental procedures and a lack of understanding of the importance of regular dental visits for preventing complications such as infective endocarditis^[4]. Previous research has highlighted that individuals with CHD often prioritize cardiac care over dental health, leading to neglect in oral hygiene maintenance^[5].

Only 30% of participants were aware of the specific risk of infective endocarditis associated with poor oral hygiene. This lack of awareness is concerning, given the severe implications of this condition for individuals with CHD^[6]. Wilson *et al.* emphasized the critical need for educating CHD patients about the risks of infective endocarditis and the importance of maintaining optimal oral health^[7].

The study's findings suggest that higher levels of education are significantly correlated with better oral health awareness and practices. This highlights the importance of educational interventions tailored to individuals with lower educational backgrounds to bridge the knowledge-practice gap. Effective educational programs should focus on the specific risks associated with poor oral health in CHD patients and practical guidance on maintaining good oral hygiene^[8].

This study has several limitations. The small sample size and retrospective design may limit the generalizability of the findings. Additionally, data collection relied on self-reported questionnaires, which are subject to recall bias and social desirability bias. Future studies with larger sample sizes and prospective designs are needed to validate these findings and explore the effectiveness of targeted educational interventions.

CONCLUSION

The study reveals a moderate level of awareness about oral health among adults with congenital heart disease in Darbhanga, Bihar. However, there is a significant gap between awareness and actual oral hygiene practices. Targeted educational and intervention programs are crucial to improve oral health outcomes in this vulnerable population. Enhancing awareness about the link between oral health and CHD, alongside facilitating better access to dental care, can potentially reduce the risk of complications such as infective endocarditis.

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