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"A Descriptive Exploration of Children's Understanding of Dental Caries in a Chosen School Setting"

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Journal of Nursing Science and Practices

Vol: 14/ Issue 1/ Year:2024

Research Article

Received date: March 10, 2024

Accepted date: April 24, 2024

Publication date: April 30, 2024

Abstract

Introduction: *Dental caries is a microbial condition that impacts the calcified tissues of the teeth, marked by the demineralization of the inorganic component and the degradation of the organic substance within the tooth. It is a persistent, contagious infection involving the modification of tooth structure due to the depletion of chemicals resulting from metabolic activities, along with the presence of dental biofilm on the tooth surface. The study employed a descriptive research design within a selected school in Shrirampur, where 40 children were chosen using a non-probability (convenience) simple random technique. The objective was to assess the understanding of dental caries among students in schools.A nurse investigator conducted a comprehensive test over a duration of 5 hours to gather data, which was subsequently analyzed using both descriptive and, when necessary, inferential statistics.* ***Results:*** *Finding of the study shows that maximum mean is 13.32, median is 13 and standard deviation is ±3.51.* ***Conclusion:*** *Present study concludes that knowledge regarding dental carries are present in children which are having significancewith their demographic variables.*

Keywords: Study, Assess, Selected, Knowledge, Dental Carries, School children.

INTRODUCTION

"Oral health is another essential piece of the puzzle when it comes to staying healthy"
-Kami Hoss

It is characterized as a complex condition resulting from acid-producing bacteria that actively

target and harm dental hard tissue. This ailment can be further explained as a microbial imbalance within the oral cavity, influenced by factors such as saliva composition, exposure to fluoride, and dietary habits. According to national statistics, the prevalence of dental caries stood at 71.35% among 15-year-old individuals in the year 2019. On a global scale, severe, chronic, and debilitating mental disorders significantly impact overall health, functioning, autonomy, and subjective well-being, affecting individuals' perceptions of realityThe World Health Organization reports that around 24 million individuals globally are affected by schizophrenia, making it one of the top ten diseases responsible for the worldwide disease burden. The actionsnecessary to offer adequate services for people with mental diseases, such as schizophrenia, are highlighted in the World Health Organization Comprehensive Mental Health Action Plan 2013–2030 [1-4].

NEED FOR STUDY

Dental decay, also known as caries, occurs when acids produced by bacteria breaking down sugars in the diet lead to the deterioration of the teeth's hard surfaces (1). Globally, dental caries stands as the most prevalent chronic ailment, impacting nearly half of the world's population (44%) (4,5). As per the 2015 Global Burdens of Disease Study, 2.3 billion individuals are affected, marking it as the most widespread oral condition. The pain associated with dental caries can disrupt school attendance, eating, and speaking, subsequently hindering growth and development. While developed countries have seen a reduction in the overall occurrence of dental caries, this issue still poses a major public health challenge in numerous developing nations. Known commonly as tooth decay or cavities, dental caries is recognized as the most widespread non-infectious disease globally. Severe cases of dental caries not only impact general health but also lead to pain and infections, often necessitating tooth extraction.

In the United States, cavities, also referred to as caries or tooth decay, represent the most common chronic childhood disease. If left untreated, cavities can result in pain and infections, potentially causing issues with activities such as playing and learning. Some endeavors seek to enhance comprehension of the increasingly significant issue of dental erosion and the corresponding tooth wear process. Others aim to track the evolving prevalence of caries in diverse populations, explore enhanced diagnostic approaches, or assess strategies for prevention and treatment. According to the 2022 global report on oral health by the World Health Organization (WHO), approximately 3.5 billion people worldwide are affected by oral diseases, with three-quarters of these individuals residing in middle-income countries. Globally, around 2 billion people face issues with dental caries in their permanent teeth, while 514 million children encounter caries in their primary teeth.

It is crucial to assess the risk of caries for an individual when deciding on the placement of sealants. The application of fissure sealants should not be viewed as "routine" for all children, as teeth at low risk derive minimal benefit from sealant placement, and it may not be a cost-effective measure [5-9].

OBJECTIVES

1. Evaluate the understanding of dental caries among schoolchildren.
2. Investigate the correlation between the knowledge of dental caries in schoolchildren and specific demographic factors.

ASSUMPTIONS

1. School children are expected to possess some understanding of preventive measures for dental caries.
2. School children’s need education regarding prevention of dental carries.
3. Health status of the children can be maintained.

MATERIAL AND METHOD

A descriptive research approach was employed in a chosen school in Shrirampur, where 40 children were

selected using a non-probability (convenience) simple random technique. The goal was to assess how aware school-aged children are of dental caries. A nurse investigator administered a test for a duration of 5 hours to gather data, which was subsequently examined using both descriptive and inferential statistics as needed.

SAMPLE SELECTION CRITERIA

Inclusion Criteria

- Known Marathi.
- Available at time of data collection children.
- Participants who were willing to participate.
- Age group 12 to 18 years of children in both genders.
- Physically and mentally fit.

Exclusion Criteria

- Children who are mentally unable to give their opinion or answer.
- Children who are already infected from dental carries.
- Children who do not want to participate in this study.

STATISTICAL ANALYSIS

Section A: Demographic Variable

Part I: Description of socio demographic profile of children.

Distribution of children According to their age suggests that highest percentage (85%) of

percentage of sample had 12-13 year. Percentage wise distribution of Children according to their age depicts that highest percentage is (85%) are in group of 12-13 year. Hence it can interrupted the majority of children under the study belong to adolescents. Percentage wise distribution of residence according to highest percentage (75%) is in an urban area. Distribution of children's according to theirpatents educational status the highest percentage (42.5%) is in a SSC/HSC class. Percentage wise distribution of parents according to their occupation shows that highest percentage (32.5%) is in a daily wage earner. Distribution of children according to their parent's monthly income status the highest percentage (37.5%) is in above in a 35000 per month. Percentage wise distribution of socioeconomic status the highest percentage in upper class is (7.5%).

Part II: Description of extraneous profile of children.

Distribution of children's according to immunization status the highest percentage is (100%) all children's successfully achieved immunization. Percentage wise distribution in children according to nutritional status the highest percentage shown in good nutrition is (40%). Percentage wise distribution of children according their genetic abnormalities the highest percentage is (92.5%).

Section B: Part I to assess the knowledge regarding dental carries among school children.

Table 1. Assessment of knowledge regarding dental carries among school children.

Sr.No	Area (Selected School)	Mean	Standard Deviation	Median	Mean %
1.	Knowledge	13.325	±3.51	13	13%

A total number of 40 children's are include in study. Mean of overall knowledge is 13.32, standard deviation is ±3.51 and median is 13. Knowledge (57.5%) had average knowledge and (37.5%) had good knowledge regarding dental carries in children's (Table 1).

Section C: Find out the association of knowledge regarding dental carries in school children with selected demographic variables.

Table 2. Items wise distribution of frequency knowledge of children regarding dental carries.

S.N	Questions	Freq	%
1.	How many times a day should you brush your teeth?	29	72.5%
2.	Which color do you think your teeth should be?	39	97.5%
3.	Which is the first teeth that fall out are called?	33	82.5%
4.	How often should you brush your teeth at night to keep them clean?	25	63%
5.	What are the ways to maintain dental hygiene at home?	17	42.5%
6.	What is the age when teeth first fall out?	25	62.5%
7.	What is the cause of dental carries?	22	55%
8.	When your teeth are broken, what objects scratch your teeth?	21	52.5%
9.	What is the complication of dental carries?	18	45%

10	Which are the side affects you face when your tooth is decaied?	14	35%
11	Which is the street food may cause dental carries?	36	90%
12	How you maintain your tooth whiteness?	38	95%
13	Which of the following options use to reduce yellowness of your Teeth?	18	45%
14	When should you brush your teeth?	35	87.5%
15	Why do you wash your mouth after eating food?	23	57.5%
16	What can we do to prevent dental carries?	33	82.5%
17	Which home remedies can be use after dental carries?	26	65%
18	How saliva helps to prevent dental carries?	22	55%
19	What you will do after dental carries?	21	52.5%
20	Which food should you avoid after dental carries?	38	95%

To explore the relationship between the awareness of dental caries among school children and demographic variables. The different value of chi square value of age, sex, residence, parents educational status, parents occupation, monthly income, socioeconomic status, immunization status, nutritional status and genetic abnormalities is 3.19, 4.6, 954.76, 5.73, 120.4, 62.39, 1.05, 1.12, 35.8 and 33.8 (Table 2).

Section D: Chi square of Association between knowledge regarding dental carries in school children's and selected demographic variables.

Table 3. Chi square of Association between knowledge regarding dental carries in school children's and selected demographic variables.

Sr. No	Demographic variables	Knowledge	
		X^2value	Level of significance
1.	Age	3.19	Non-Significant
2.	Sex	4.64	Non-Significant
3.	Residence	954.76	Non-Significant
4.	Parents Educational Status	5.73	Non-Significant
5.	Parents Occupation	120.4	Significant
6.	Monthly Income	62.39	Significant
7.	Socioeconomic Status	1.05	Non-Significant
8.	Immunization Status	1.12	Non-Significant
9.	Nutritional Status	35.8	Significant

10.	Genetic Abnormalities	33.8	Significant

Table 3 shows that knowledge regarding dental carries in school children'sand selected demographic variables does have significant in parents occupation, monthly income, nutritional status, genetic abnormalities. Demographical variables not showing non-significance in age, sex, parent education status, socioeconomic status, immunization status. Association on knowledge of dental carries with their demographic variables according to π^2 test ($p<0.01$) were found statically non- significant level.

SUMMARY

The article dealt with the methodology adopted for the study. This included the research approach, research design, variables, and setting of the study, sample, sampling technique, and development of tool, description of tool, and development of knowledge on dental carries, pilot study,and method of data collection, and plan for data analysis. A descriptive study design was employed, utilizing a standardized structured questionnaire approach on a sample of 40 randomly chosen children from a specific school. The study aimed to evaluate the knowledge, and following the standardization process involving validity, reliability checks, and a pilot study, the tool was employed for data collection. Subsequently, the gathered data underwent analysis using both descriptive and inferential statistics [10].

CONCLUSION

The research indicates a mean level of awareness regarding dental caries observed in school children, standing at 65%. Concurrently, it has identified a moderate level of understanding among this demographic. There is a requirement for widespread initiatives aimed at enhancing awareness, employing innovative tools, and introducing educational models to augment knowledge about dental caries among school children. This is crucial for mitigating dental issues and promoting dental hygiene at an early stage. Comprehensive education and counseling on all facets of dental caries are imperative. Strategizing both group and individual dental health educational programs will effectively disseminate knowledge about dental caries.

REFERENCES:

1. Karlsson S, Lundberg Palm F. Patients knowledge about caries prevention and oral hygiene - a comparative study [Internet] [Dissertation]. 2018. Available from: https://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-154179
2. Shiferaw A, Alem G, Tsehay M, Kibret GD. Dental caries and associated factors among diabetic and nondiabetic adult patients attending Bichena Primary Hospital's Outpatient Department. Front Oral Health. 2022 Nov 2;3:938405. doi: 10.3389/froh.2022.938405. PMID: 36407659; PMCID: PMC9666893.
3. Tafere Y, Chanie S, Dessie T, Gedamu H. Assessment of prevalence of dental caries and the associated factors among patients attending dental clinic in Debre Tabor general hospital: a hospital-based cross-sectional study. BMC Oral Health. 2018 Jul 4;18(1):119. doi: 10.1186/s12903-018-0581-8. PMID: 29973262; PMCID: PMC6030759.
4. World Health Organization. (n.d.-b). *Sugars and dental caries*. World Health Organization. Available online at: https://www.who.int/news-room/fact-sheets/detail/sugars-and-dental-caries
5. Bagramian RA, Garcia-Godoy F, Volpe AR. The global increase in dental caries. A pending public health crisis. Am J Dent. 2009 Feb;22(1):3-8. PMID: 19281105.
6. Yee R, Sheiham A. The burden of restorative dental treatment for children in Third World countries. Int Dent J. 2002 Feb;52(1):1-9. PMID: 11931216.
7. Namal N, Can G, Vehid S, Koksal S, Kaypmaz A. Dental health status and risk factors for dental caries in adults in Istanbul, Turkey. East Mediterr Health J. 2008 Jan-Feb;14(1):110-8. PMID: 18557458.
8. Žemaitienė M, Grigalauskienė R, Vasiliauskienė I, Saldūnaitė K, Razmienė J, Slabšinskienė E. Prevalence and severity of dental caries among 18-year-old Lithuanian adolescents. Medicina (Kaunas). 2016;52(1):54-60. doi: 10.1016/j.medici.2016.01.006. Epub 2016 Jan 29. PMID: 26987501.
9. Costa SM, Vasconcelos M, Abreu MH. High dental caries among adults aged 35 to 44

years: case-control study of distal and proximal factors. Int J Environ Res Public Health. 2013 Jun 7;10(6):2401-11. doi: 10.3390/ijerph10062401. PMID: 23749056; PMCID: PMC3717743.

10. Centers for Disease Control and Prevention. (2022, April 6). *Children's oral health*. Centers for Disease Control and Prevention. https://www.cdc.gov/oralhealth/basics/childrens-oral-health/index.html