ejpmr, 2022, 9(8), 392-396

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

PARENTAL AWARENESS OF ORAL HEALTH AND ORAL HEALTH RELATED BEHAVIOUR OF CHILDREN RECEIVING CANCER TREATMENT

Priyanka Bhojane[1*], Ankur Jain[2], Rinky Sisodia[3], Satish Maran[4], Anaya Kulkarni[5] and Krishna Sagar[6]

Post Graduate 3rd Year, People's Dental Academy, Bhopal, Madhya Pradesh, India.

***Corresponding Author: Priyanka Bhojane**

Post Graduate 3rd Year, People's Dental Academy, Bhopal, Madhya Pradesh, India.

Article Received on 31/05/2022 **Article Revised on 20/06/2022** **Article Accepted on 10/07/2022**

ABSTRACT

Background: Amongst the patients with cancer, many oral and dental conditions can arise, either due to direct effect of the cancer or as a result of the treatment. The children need supervised oral care so as to prevent or control the complications arising as a consequence of cancer treatment. Parental awareness towards the oral health and their oral well-being practices have a direct effect on the oral health of their children. **Aim:** To assess the parental awareness of oral health and oral health related behaviour of children receiving cancer treatment. **Methodology:** Study included 80 parents of the children undergoing cancer treatment. The awareness was assessed using a validated and reliable self-administered questionnaire containing 27 items. Statistical analysis of the data was done using SPSS (Statistical Package for Social Sciences) 21.0 version, IBM, Chicago. **Results:** Striking results revealed that more than 50% parents were unaware of the effect of cancer and cancer treatment on oral health. Seventy seven percent parents did not receive any oral health information from the medical staff. Child of 68.8% parents had never visited dental clinic. Fluoride application had been done on dentition of only 1 child. Age and gender of the parents was found to have no significant association with the level of awareness towards oral health of their child. **Conclusion:** There is lack of awareness and appropriate practices towards oral health amongst the parents of the children with cancer undergoing cancer treatment.

KEYWORDS: Parental Awareness, Self-Administered Questionnaire, Cancer Treatment, Childhood Cancer, Oral Health.

INTRODUCTION

Cancer can affect people of all ages. It is estimated that nearly 400000 children develop cancer every year. Many studies have attempted to find out the cause of cancer in childhood and only very few can be related to environmental and lifestyle factors. For vast majority of childhood cancer, a known cause is missing. It is intractable to develop cancer in children and thus most effective strategy focuses on improving outcomes by prompt, correct diagnosis followed by effective, evidence-based therapy with tailored supportive care. Most childhood cancers can be cured with chemotherapy and other forms of treatment, including surgery and radiotherapy.[1]

Amongst the patients with cancer, many oral and dental conditions can arise, some due to direct effect of the cancer and other as a result of the treatment. The chemotherapeutic agents/radiations available for the treatment of cancer are unable to differentiate between healthy cells and cancerous cells and thus results in damage to the normal tissues. [2] As the side effects of cancer treatment, a child may experience stomatitis, oral infections, haemorrhage, oral ulcerative conditions.[3,4] These conditions can result in significant pain, dysphagia and alteration in nutritional status and heightened risk of local infection which may disseminate systemically.[4]

The children need supervised oral care so as to prevent or control the complications arising as a consequence of cancer treatment. [4] Awareness of the parents towards oral health and their oral well-being practices have a direct effect on the oral health of their children. [5] Given the significant role of parents in maintaining children's dietary intake and in shaping children's oral hygiene habits, it is important to document their views. [6] Thus, present study was conducted with the aim to assess the Parental awareness of oral health and oral health related behaviour of children receiving cancer treatment.

MATERIALS & METHOD

Study design, study population, sample size, sampling technique

This cross-sectional, questionnaire-based survey was conducted in the Bhopal city over a duration of 6 months (from september 2021 to ferbuary 2022). The study population was the parents of the children receiving cancer treatment at Jawaharlal Nehru Cancer Hospital and Research centre;Bhopal, Chirayu Cancer Hospital; Bhopal, and Navodaya Cancer Hospital; Bhopal.

The study included 80 participants. Sample size was calculated using the following formula: $Z_{1-\alpha/2}{}^2 p (1-p) / d^2$
Where.
Z 1- $\alpha/2$ = Is standard normal variate (at 5% type 1 error (P<0.05) it is 1.96 and at 10% type 1 error (P <0.01), it is 1.645). p = percentage picking a choice (assumed to be 95% based on pilot study), d = Absolute error or precision (5%).
Thus, minimum required sample size was 73. However, 80 participants were included in the study. Parents, who were able to read and understand Hindi and/or English language were included. Parents having comprehensive disability were excluded from the study.
The participants were enrolled in the study using convenience sampling technique.

METHODOLOGY

This survey utilized a self-administered questionnaire The questionnaire consisted of 27 items pertaining to the awareness of the parents regarding oral health of their child undergoing cancer treatment. The questionnaire was developed in English language and was translated to Hindi language. The reliability and validity assessment of both the versions of questionnaire was done. After development, the questionnaire was reviewed by the experts from the field of paediatric oncology and paediatric dentistry for its content and theoretical construct. It was ensured that questions were relevant and could assess the awareness amongst parents appropriately. After minor changes in the questionnaire based on the expert's advice, it was administered to 20 people for reliability assessment. The test- retest method was employed and Cronbach's alpha value 0.8 represented that the questionnaire is having acceptable reliability.[7]

The questionnaire was administered to 80 parents of children undergoing cancer treatment. The principle investigator made herself available to the participants in case any clarification was needed by the participants.

Statistical Analysis

The data collected was entered into the excel sheet. Data was analysed using SPSS (Statistical Package for Social Sciences) 21.0 version, IBM, Chicago. Descriptive statistics was performed. Comparison of responses between different age groups and gender was done using Chi-square test. P value <.05 was considered statistically significant.

RESULTS

The mean age of the participants was 34.65±5.53035 years and the mean age of the children (undergoing chemotherapy) was 7.5125±3.02728 years.

More than 50% of the parents were unaware of the effect of cancer and cancer treatment on oral health. More than 90% parents had never attended any oral health awareness programme. Seventy seven percent parents reported that they had neither received any oral health information from the medical staff of Paediatric Oncology department nor their child had been referred to dental surgeon for check-ups/ follow-ups by medical practitioner. However, 91.3% parents were counselled for diet of the child. Mouth sores (77.5%), toothache (61.3%), increased bleeding from gums (46.3%), dry mouth (82.5%) was reported by most of the parents. Consumption of sweetened beverages (62.5%) and sweet syrup (77.5%) as the part of cancer treatment was a frequent finding. A majority (71.3%) of the parents reported that they were not interested in oral health of the child. Child of 68.8% parents had never visited dental clinic. Fluoride application had been done been on dentition of only 1 child. Fifty eight percent parents did not know about the need of routine dental check-up. [Table 1]

On comparing the responses of mother and father, it was found that significantly greater number of mothers said that their child complains of mouth sores during chemotherapy [Chi-square value- 6.386, df-1, p value <.05].

The response to other questions except Q. 12, differed non-significantly between mother and father (p value >.05).

On comparing the responses of the parents belonging to different age groups (18-20 years. 21-30 years, 31-40 years, 41-50 years), no statistically significant difference was observed (p value >.05).

Table 1: Response of the patients to different questions.

Question	Response	Number	Percentage
Q1. Do you know that the cancer and cancer therapy affect oral health of the child?	Yes	32	40.0
	No	48	60.0
Q2. Do you believe that oral health can interfere with the general health of the child?	Yes	37	46.3
	No	43	53.8
Q.3 Have you ever participated in any awareness program related to oral health?	Yes	6	7.5
	No	74	92.5
Q.4 Do you have any information on how to avoid/prevent caries?	Yes	36	45.0
	No	44	55.0
Q 5. Have you received oral health information from the medical staff of Paediatric Oncology department?	Yes	18	22.5
	No	62	77.5

Q.6 Have your child been referred to dental surgeon for check-ups/ follow-ups by medical practitioner?	Yes	10	12.5
	No	63	78.8
	Sometimes	7	8.8
Q.7 Has the medical practitioner referred your child to a paediatric dentist to treat any dental emergency?	Yes	23	28.8
	No	57	71.3
Q. 8 Have you followed dental preventive advice given by the hospital staff?	Yes	38	47.5
	No	17	21.3
	Not given advice	25	31.3
Q. 9 Have you and your child been given dietary counselling by the paediatrician or dietitian?	Yes	73	91.3
	No	7	8.8
Q. 10 Has your child ever complained of tooth pain during chemotherapy periods?	Yes	49	61.3
	No	31	38.8
Q. 11 Have you noticed increased bleeding from gums of your child after the cancer has been diagnosed?	Yes	37	46.3
	No	43	53.8
Q. 12 Does the child complain of mouth sores during chemotherapy periods?	Yes	62	77.5
	No	18	22.5
Q. 13 Does your child complain of dry mouth which forces him/her to drink water?	Yes	34	42.5
	No	14	17.5
	Sometimes	32	40.0
Q. 14 Does the child consume sweetened beverages or snacks between meals?	Yes	50	62.5
	No	30	37.5
Q. 15 Is there any history of long-term use of syrup-based medications related to cancer therapy?	Yes	62	77.5
	No	18	22.5
Q. 16 If yes, for how many days the syrup-based medications have been given to your child specially during cancer therapy?	3 months	19	23.8
	6 months	8	10.0
	9 months	13	16.3
	More than 9 months	22	27.5
Q. 17 How many times does your child brush his/her teeth a day?	Once	67	83.8
	Twice	11	13.8
	Thrice	1	1.3
	Other (specify)	1	1.3
Q. 18 Who performs the oral hygiene practice of the child?	Child himself/herself	65	81.3
	Others (Parent/guardian/nurse)	15	18.8
Q. 19 If yes, what is the frequency of using mouth wash by your child?	Once	16	20.0
	Twice	26	32.5
	Thrice	10	12.5
	Do not use	28	35.0
Q. 20 What is the type of mouthwash used by your child?	Fluoridated	1	1.3
	Non- fluoridated	6	7.5
	Do not know	44	55.0
	Do not use mouthwash	29	36.3
Q. 21 How do you rate the oral health of your child?	Poor	15	18.8
	Fair	45	56.3
	Good	20	25.0
Q. 22 Are you interested in dental care for your child?	Yes	57	71.3
	No	23	28.8
Q. 23 When was your last visit of your child to the dentist?	The child has never been to the dentist	55	68.8
	Less than 6 months	10	12.5
	More than 6 months but less than 1 year	8	10.0
	1 year or more	7	8.8
Q. 24 Have you taken your child to a dentist before starting chemotherapy?	Yes	9	11.3
	No	71	88.8
Q. 25 Have fluoride application been done on your child's teeth?	Yes	1	1.3
	No	79	99.7
Q. 26 Do you feel that routine dental health check-up of	Yes	47	58.8

your child is important?	No	33	41.3
Q. 27 Do you know that there is a separate branch in dentistry for children?	Yes	10	12.5
	No	70	87.5

DISCUSSION

The cancer treatment had been found to affect the oral health of the patients. Many studies had shown a correlation between anticancer treatments, especially chemotherapy, and the incidence of oral complications in infant-juvenile patients and adults.[8] The role of primary care givers/ parents had been undisputed in development of child's health and behaviour. Evidence suggested association between parental oral health knowledge and behaviours and their child's oral health status.[9] Thus, in the present study an effort had been made to assess the awareness towards oral health of parents of children undergoing cancer treatment.

In the present study, less than half of the parents were aware of the effects of cancer treatment on oral health. National Institute of Health also reported that many people were not aware of the fact that most people treated for cancer develop problems in oral cavity.[10] This lack of awareness regarding the possible association between cancer treatment and oral health could be the reason that most (92.5%) of the parents who had participated in this study did not attend any oral health related awareness program.

In the present study, 53.8% parents did not believe that oral health can interfere with the general health of the child. Even amongst general population, 70.8% of patients with major systemic conditions, had been found to have poor knowledge and awareness, regarding the relationship between oral health and their systemic condition.[11]

Oral health is usually not given a priority during the cancer treatment. [12] It is evident from the finding of the study that 77% parents were neither given oral health information from the medical staff of Paediatric Oncology department nor were referred to dental surgeon for check-ups/ follow-ups and 33.1% parents were not given any dental preventive advice by the hospital staff, whereas previous study had reported less oral cavity related complications in those cancer patients undergoing radiotherapy and /or chemotherapy who attended dental treatment sessions during the course of cancer treatment.[13] In the study done by Gupta et al. (2016), none of the children with cancer were referred to dentist for check-ups or follow ups.[14]

The commonly found oral manifestations of cancer treatment are mucositis, xerostomia, infections, salivary gland dysfunction, dysgeusia, and pain.[15] In the present study also, majority of the patients reported that their child complaint of mouth sores (77.5%), toothache (61.3%), increased bleeding from gums (46.3%), dry mouth (82.5%). Surprisingly, even after receiving oral health related complaints from their children, the percentage of parents whose children had never been to dental clinic was 68.8%. Gupta A et al. (2016) found this percentage of parents who had not taken their kids to dentist to be even greater (87%). [14] In the present study 88.8% parents had not taken their child to dentist before starting cancer treatment. However, it is now known that in patients undergoing cancer treatment the incidence and severity of oral complications are associated with pre-existing factors (cavities, gum disease and poor hygiene) that clearly affect their emergence, increase and persistence. Thus, a visit to dentist prior to the treatment is very valuable. [16]

These above-mentioned findings were in coherence to the response of the parents stating that they are not interested in dental care of their child. It is reflected in the another finding of the study where only 1 child had had fluoride application on teeth and lesser number of children brushing their twice daily and/or using mouthwash.

Most of the parents were unaware of the existence of a branch of dentistry dedicated to children (Paediatric dentistry). Findings of the similar study form Saudi Arabia were in agreement with the findings of the present study, indicating lack of awareness amongst the parents of the paediatric patients undergoing cancer treatment. [17]

This evince that there is a lack of knowledge about the importance of good oral health and prevention of radio-chemotherapy complications. Professionals are responsible for providing parents with this information and establishing protocols of oral hygiene and preventive measures that are accessible to parents and their children.[18] There is a need to treat cancer patients in a multidisciplinary hospital, where the dentist has complete communication and interprofessional collaboration (nurses, nutritionists, psychologists, oncologists, and oral and maxillofacial surgeons).[18, 19]

CONCLUSION

Based on the findings of the study, it can be concluded that there is lack of awareness and lack of appropriate practices towards oral health amongst the parents of the children with cancer undergoing cancer treatment.

REFERENCES

1. WHO. Childhood cancer (who.int). Available from: https://www.who.int/news-room/fact-sheets/detail/cancer-in-children
2. Sharma S. Effects of chemotherapy on oral mucosa. J Academy Educ, 2020; 6(1 &2): 11-15.
3. Rosenberg SW. Oral care of chemotherapy patients. Dent Clin North Am, 1990 Apr; 34(2): 239-250.

4. Cheng KK, Molassiotis A, Chang AM. An oral care protocol intervention to prevent chemotherapy-induced oral mucositis in paediatric cancer patients: a pilot study. Eur J Oncol Nurs, 2002 Jun; 6(2): 66-73.
5. Mahesh R & Leelavathi L. (2018). Awareness and role of parents in their child's oral health and brushing technique - A questionnaire study. Drug Invention Today, 2018; 10: 3723-3727.
6. Duijster D, de Jong-Lenters M, Verrips E et al. Establishing oral health promoting behaviours in children – parents' views on barriers, facilitators and professional support: a qualitative study. BMC Oral Health, 2015; 15: 157.
7. Tavakol M, Dennick R. Making sense of Cronbach's alpha. *Int J Med Educ*, 2011; 2: 53-55.
8. Berger-Velten D, Zandonade E & Monteiro de Barros Miotto MH. Prevalence of oral manifestations in children and adolescents with cancer submitted to chemotherapy. BMC Oral Health, 2016; 16: 107.
9. Bridges SM, Parthasarathy DS, Wong HM, Yiu CK, Au TK, McGrath CP. The relationship between caregiver functional oral health literacy and child oral health status. Patient Educ Couns, 2014; 94(3): 411–416.
10. Cancer treatment and oral care. National Institute of Dental and Craniofacial Research. Available from: https://www.nidcr.nih.gov/health-info/cancer-treatments
11. Akl S, Ranatunga M, Long S, Jennings E, & Nimmo A. A systematic review investigating patient knowledge and awareness on the association between oral health and their systemic condition. BMC public health, 2021; 21(1): 2077.
12. Harnett E. Integrating Oral Health throughout Cancer Care. Clinical Journal of Oncology Nursing, 2015; 19(5): 615-619.
13. Saito H, Watanabe Y, Sato K, Ikawa H, Yoshida Y, Katakura A. Effects of profesional oral health care on reducing the risk of chemotherapy-induced oral mucositis. Support Care Cancer, 2014; 22: 2935–2940.
14. Gupta A, Marwaha M, Bansal K, Sachdeva A, & Gupta A. Dental Awareness among Parents and Oral Health of Paediatric Cancer Patients Receiving Chemotherapy. Journal of clinical and diagnostic research: JCDR, 2016; 10(5): ZC92–ZC95.
15. Lula ECO, Lula CEO, Alves CMCA, Lopes FF, Pereira AAP. Chemotherapy-induced oral complications in leukemic patients. Int J Pediatr Otorhinolaryngol, 2007; 71: 1681–1685.
16. Barbería E, Hernandez C, Miralles V, Maroto M. Paediatric patients receiving oncology therapy: review of the literature and oral management guidelines. Eur J Paediatr Dent, 2008 Dec; 9(4): 188-194.
17. Alkhuwaiter SS. Parent's awareness an oral health care measures of Pediatric patients receiving chemotherapy. J Pediatr Dent, 2021; 7(1): 1-8.
18. Nuñez-Aguilar J, Fernández-Olavarría A, Oliveros-López LG, Torres-Lagares D, Serrera-Figallo MA, Gutiérrez-Corrales A, & Gutiérrez-Pérez JL. Evolution of oral health in oral cancer patients with and without dental treatment in place: Before, during and after cancer treatment. Journal of clinical and experimental dentistry, 2018; 10(2): e158–e165.
19. Harris JA, Ottaviani G, Treister NS, & Hanna GJ. An Overview of Clinical Oncology and Impact on Oral Health. Frontiers in oral health, 2022; 3: 874332.