

Treatment Requirement and Gingival Status among the Pediatric Patients Visiting

Bhavana Koul¹, Bhanu Kotwal², Nanika Mahajan², Sharad Kharyal³

¹Associate Professor, Department of Pedodontics, IGGDC, Jammu, Jammu and Kashmir, India, ²Registrar, Department of Periodontics, IGGDC, Jammu, Jammu and Kashmir, India, ³Postgraduate, Department of Orthodontics, KVG, Karnataka, India

Abstract

Introduction: Periodontitis is the most common chronic diseases in adults; it is bacterially mediated inflammation that extends deep into the tissues, causing loss of supporting connective tissue, and alveolar bone.

Aim: To determine treatment needs and gingival status by Community Periodontal Index of Treatment Needs (CPITN) index in the patients visiting Department of Pedodontics, Government Dental College, Jammu, India.

Materials and Methods: The study participants included 200 participants aged 13-14 years. Clinical examination was carried out using CPITN probes, with applying gentle probing force according to the World Health Organization criteria. The severity of the gingival disease were evaluated and documented according to gender, frequency of dental brushing, plaque index, and CPITN.

Results: In 200 participants of 13-14 years of age, 100 (50.0%) were males, and 100 (50%) were females. The CPITN index (Code 0) 66.0% was most prevalent followed by (Code 1) 22.0%, (Code 2) 9.0%, and (Code 3) 3.0%.

Conclusions: Female participants were found to have higher gingival status (Code 0) as compared to males. Poorer periodontal health status in some participants had been related to poor plaque score and low brushing frequency.

Key words: Community periodontal index of treatment needs, Gingiva, Pediatric

INTRODUCTION

Periodontitis is the most common chronic diseases in adults; it is bacterially mediated inflammation that extends deep into the tissues, causing loss of supporting connective tissue, and alveolar bone.¹

As the prevalence and severity of periodontal diseases are high among population, prevention, and treatment of these diseases are one of the most serious problems of the modern dentistry.²

The Community Periodontal Index of Treatment Needs (CPITN) index has developed jointly by the International Dental Federation (IDF) and the World

Health Organization (WHO) to evaluate periodontal status and treatment needs of population.^{3,4}

MATERIALS AND METHODS

The participants of the study were aged between 13 and 14 years from the patients visiting Department of Pedodontics, Government Dental College, Jammu, India. A single dentist trained for the specific study conducted the Clinical examination under day light using mouth mirrors and CPITN probes (designed by the WHO/IDF), with applying a gentle probing force (20 g or lower) according to the WHO criteria.⁵⁻¹¹

Both Sexes were Equally Distributed

Six segments were assessed for each participant. Pocket depth was measured at six sites around each tooth (mesial, midline, and distal on both lingual/palatal surfaces). The index teeth were 16, 11, 26, and 36, 31, 46. If less than two functional teeth existed, the sextant would have been classified as edentulous. Each sextant, based on which tooth showed the worst situation, was

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Corresponding Author: Dr. Bhavana Koul, Department of Pedodontics, IGGDC, Jammu, Jammu and Kashmir, India.
E-mail: drbhavanakoul@yahoo.com

given a grade and registered according to the highest recorded at the index teeth.

Each sextant was designated as healthy when no treatment is required (Code 0 = TN0), or X (missing). In case of bleeding without calculus, it was recommended to improve oral hygiene (Code 1 = TN1). If calculus but no periodontal pockets were detected, oral hygiene instructions were provided and professional cleaning was carried out, if indicated (Code 2 = TN2). The presence of 4-5 mm pockets (Code 3), and 6 mm or deeper (Code 4) may or may not need treatment by deep scaling. In such a condition, root planning, and more complex surgical procedures may be indicated. The severity and prevalence of the periodontal diseases, as well as its frequency distribution were evaluated and reported according to gender, frequency of dental brushing, plaque index, smoking, and CPITN.

Chi-square test was conducted to determine the CPITN index in relation to gender, frequency of dental brushing, plaque index, and smoking status.

RESULTS

Table 1 demonstrates the distribution of samples in relation to gender. In the present study, out of total number of 200 participants of age 13-14 years, 100 (50.0%) were males, and 100 (50.0%) were females.

Table 2 demonstrates the distribution of brushing status in relation to gender. In the present study 122(61.0%) of the participants brushes once and 78 (39%) of the participants brushes twice. The frequency of brushing was found to be higher in females as compared to males.

Table 3 demonstrates the distribution of participants according to their periodontal treatment needs in relation to gender. No significant difference was found in the type

Table 1: Distribution of samples in relation to gender

Male n (%)	Female n (%)	Total n (%)
100 (50)	100 (50)	200 (100)

Table 2: Distribution of brushing status in relation to gender

Frequency	n (%)		
	Male	Female	Total
Once	69 (69)	53 (53)	122 (61)
Twice	31 (31)	47 (47)	78 (39)
Total	100 (50)	100 (50)	200 (100)

Chi-square=5.380, df=4, P=0.2

of periodontal treatment needs in terms of gender. In the present study, 86 (43.0%) of the participants had no signs periodontal disease (Code 0), 74 (37.0%) of the participants presented gingival bleeding after probing (Code 1) which required just oral hygiene instruction, 24 (12.0%) had supragingival calculus (Code 2), and 16 (8.0%) presented pockets of 4-5 mm which required removal of supra or subgingival calculus.

Table 4 demonstrates the distribution of participants according to plaque index score in relation to gender. In the present study, 88 (44.0%) had a good plaque score, (46.0%) had a fair plaque score, and 20 (10.0%) had a poor plaque score. The females show statistically significant (P = 0.000) higher healthy periodontal status than males. It was observed that the participants with lower plaque score had healthier periodontal tissues than participants with fair or higher plaque score.

DISCUSSION

Periodontal diseases are the diseases that involve the periodontal structures beyond the gingiva and lead to loss of connective tissue attachment.¹² Periodontal diseases are among the most widespread diseases in mankind.¹³ The oral cavity is not a sterile cavity. There are more than 500 bacterial species that are capable of colonizing in the oral cavity, and while about 150 species can be found in one individual, a number of these species are more associated with periodontal diseases than others.¹⁴ Periodontal diseases are caused not by a single oral microorganism but by several and the list is still being refined due to the complexity of

Table 3: Distribution of participants according to their periodontal treatment needs in relation to gender

Parameter	CPITN				
	Code 0 n (%)	Code 1 n (%)	Code 2 n (%)	Code 3 n (%)	Total n (%)
Male	32 (16)	48 (24)	13 (6.5)	7 (3.5)	100 (50)
Female	54 (27)	26 (13)	11 (5.5)	9 (4.5)	100 (50)
Total	86 (43)	74 (37)	24 (12)	16 (8)	200 (100)

Chi-square=12.585, df=8 and P=0.12

Table 4: Distribution of participants according to plaque index score in relation to gender

Code	n (%)		
	Male	Female	Total
Good	17 (8.5)	71 (35.5)	88 (44)
Fair	64 (32)	28 (14)	92 (46)
Poor	19 (9.5)	1 (0.5)	20 (10)
Total	100 (50)	100 (50)	200 (100)

Chi-square=63.42, df=6, P=0.000

the matter. Some of the microorganisms are considered to be more pathogenic than others.

The CPITN was endorsed by the WHO for population-based surveys in the 1980s. Although it has limitations, CPITN reflects unmet treatment needs and can give a fair assessment of the periodontal condition. It was used in this study because it has proved to be a simple and effective method for measuring and monitoring the severity of periodontal disease at the community level.¹⁵

The CPITN was adopted by the WHO and FDI has been used in many studies as a basic epidemiological tool for the assessment of the nature and magnitude of the need for periodontal treatment and as an aid for planning public dental services. It was used in this study because it has proved simple and effective method for measuring and monitoring the severity of periodontal diseases. The results of CPITN have shown that healthy sextants (Code 0) were found to be more frequent in females than males ($P < 0.00$). This is in accordance with a study carried out in Iran by Ashraf and Alireza³ the reason why gender affects periodontal health status may be attributed to the habit and conscious of females in doing a better oral hygiene practice.

This study also revealed that (Code 1) was found to be more frequent in males than in females. Various factors such as altered host response changes in oral microflora may probably contribute to more severe forms of periodontal disease.¹¹

CONCLUSION

There is a significant need for oral hygiene instructions and professional cleaning. There is a need for oral health education among this subpopulation of children and care givers; and provision of accessible, affordable, and regular

use of oral health services to help meet their treatment needs. CPITN is a simple and quick screening tool for use in general dental practice which assists in assessing the goals of the treatment and time and cost estimation.

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