

Questionnaire-based community periodontal susceptibility screening index

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ABSTRACT

Periodontal diseases are major causes of tooth loss and contribute to significant morbidity and healthcare costs. Therefore, identifying areas that deliver substantial returns with community-based preventive programs are a dire necessity. Planning and implementing preventive measures in periodontal oral care require identification of not only a population with current disease burden, but also of future susceptibility to disease. All major periodontal indices that have been used in community periodontal surveys are designed to identify either severity, prevalence, or treatment needs of periodontal diseases. No known index exists based on scientifically proven risk factors of periodontal disease to identify population susceptible to the disease, and to determine the need for preventive planning and interventions. In this article, a simple questionnaire-based index has been proposed to identify both individual and community susceptibility to periodontal disease.

Key words: Community, individual, periodontal disease, susceptibility index

Introduction

Periodontal diseases are highly prevalent all over the world. In India, a high prevalence of periodontal disease has been reported in earlier studies [1,2]. Such high prevalence means increased treatment-needs and susceptibility of the population to periodontal disease. Since periodontal diseases are a major cause of tooth loss resulting in high treatment/replacement cost in the majority of the population, it is important to identify areas that are cost-benefit and cost-effective; a need for community-based preventive program. Planning and implementing preventive approaches in periodontal oral care require identification of not only population with current disease burden, but also those that are susceptible to the disease. All major periodontal indices that have been used in community periodontal surveys are based on identification of the severity, prevalence, and treatment needs. There is no known index based on scientifically proven risk factors of periodontal disease to determine disease susceptibility and to identify the need for preventive planning and interventions. In this article, a simple questionnaire-based index has been proposed to identify both individual and community susceptibility to periodontal disease.

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Questionnaire-Based Community Periodontal Susceptibility Index

Rationale of questionnaire-based community periodontal susceptibility index

Indices based on determining periodontal treatment needs for periodontal diseases are both time consuming and show inter-examiner differences [3]. In addition, they measure the past disease morbidity, present oral hygiene conditions, and treatment needs. None of them provides information about the susceptibility to further loss and social risk factors, which are more relevant to preventive dentist or oral health care programmer. In addition, apart from genetic susceptibility, all major risk factors for periodontal disease are based on social determinants of health. Risk factor control and elimination are the primary objective in both the periodontal prevention and treatment to maintain a stable and healthy periodontium. Questionnaire-based community periodontal susceptibility index (QCPSI) is easy, simple, quick, noninvasive and does not require any special training to administer. Moreover, it yields a lot of periodontally and socially relevant health care information and identifies areas for periodontal preventive health care. Furthermore, it calculates individual susceptibility along with community susceptibility to segregate individuals at high risk for further evaluation.

Figure 1 presents details about the QCPSI, and the chart and scoring are illustrated in Table 1.

SHORT COMMUNICATION

Identification of preventive/educational/interventional needs based on questionnaire-based community periodontal susceptibility index charting and score

Both QCPSI chart and index have been designed to obtain substantial information on periodontal diseases, and are useful in ascertaining socio-demographic and lifestyle characteristics that contribute to the etiopathogenesis [Table 2]. In addition, the index helps in determining individual and community periodontal disease susceptibility.

Figure 1: Questionnaire-based community periodontal susceptibility index

-Can be asked both verbally and in written
-Easily understandable local language should be used
-Specify Age range under survey

SET A

A1 Do you use finger for cleaning teeth? No/Yes

[If yes, ask A2 else proceed to SET B]

A2 Do you think it is effective in cleaning teeth?

SET B

B1 Do you consume tobacco in any form?

B2 Do you smoke?

SET C

C1 Are you suffering from any systemic/bodily/generalized illness?

C2 Are you diabetic/sugar?

SET D

D1 Have you ever visited a dentist/local for treatment?

D2 Did your dentist cleans your teeth?

SET E

E1 Do your gums bleed?

E2 Do your gums bleed along with mobile teeth?

Strengths and limitations of questionnaire-based community periodontal susceptibility index

The strengths of QCPSI include:

- Helps establish the susceptibility and preventive needs based on scientifically proved susceptibility factors
- Helps assess therapeutic needs of the population
- Less time consuming and no intra examiner variation
- Easy to understand and use
- Can be used in both verbal and written formats
- Can easily accept other surveys and provide information to other surveys as well
- Only known index that determines periodontal susceptibility based on social factors.

The limitations of the QCPSI include:

- Does not account for the genetic factors that determine the disease severity, progression, and susceptibility
- Does not determine the community treatment needs. Identifies only preventive needs
- Based on answers provided by the subject and not objective examination
- Does not include all the risk factors and inappropriate weight to certain factors.

Conclusion

Periodontal diseases are highly prevalent disease affecting a large majority of the population. Effective prevention in periodontal diseases can control both disease morbidity and treatment costs. Needs assessment of individual and community susceptible to periodontal diseases is of utmost importance to combat the diseases at an earlier stage. Until date, no known periodontal index has predicted community susceptibility to periodontal disease. QCPSI is simple, quick,

Table 1: Scoring of questionnaire-based community periodontal susceptibility index

QCPSI	Oral hygiene education		Tobacco consumption		Health illness		Availability of health care		Susceptibility to periodontal disease		Score
	Set A		Set B		Set C		Set D		Set E		
Rationale	About oral hygiene (A1)	Change acceptability (A2)	Status (B1)	Smoking status (B2)	Status (C3)	Diabetic status (C4)	Available (susceptible) (D1)	Periodontal treatment (for gum problems) (D2)	History of periodontal illness (E1)	Definite periodontal illness (E2)	
Scoring	Yes=2 No=0	Yes=3 No=0	Yes=2 No=0	Yes=3 No=0	Yes=2 No=0	Yes=3 No=0	Yes=2 No=0	Yes=3 No=0	Yes=2 No=0	Yes=3 No=0	Max score=25
Degree of susceptibility to periodontal diseases based on the score											
Individual						Population					
Score	Inference					Score	Inference				
0-10	Low/mild susceptibility/need counseling					0-10	Low/mild susceptibility				
10-20	Moderate susceptibility/need counseling plus complete periodontal examination					10-20	Moderate susceptibility				
20-25	High susceptibility/need counseling plus complete periodontal examination/probable referrals to specialist					20-25	High susceptibility				

QCPSI: Questionnaire-based community periodontal susceptibility index

SHORT COMMUNICATION

Table 2: Information obtained from QCPSI

Oral hygiene educational needs
Smoking cessation/education
Systemic health status
Diabetic status
Availability of oral health care
Periodontal health care
Prevalence of gingival disease
Community periodontal needs
Identify highly susceptible individuals
About oral hygiene educational needs

QCPSI: Questionnaire-based community periodontal susceptibility index

non-invasive index that can yield a lot of useful information to target periodontal diseases in the population. To what extent it is able to deliver its intended purpose, however, can only be judged by controlled comparison with other established indices in actual field surveys, and future studies should be warranted in this direction.

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Author's Contributions

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Competing Interest

Nil

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