

Periodontal awareness among adult Finns in 1972 and 1990

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Surveys were conducted in 1972 and 1990 to analyze conceptions among Finns of their own periodontal status. The interview samples, drawn to represent the Finnish population aged 15 years and more, comprised 965 persons in 1972 and 1006 in 1990. After excluding edentulous individuals, a total of 732 in 1972 and 853 in 1990 were accepted for the interview study. In 1990, 2% of the respondents stated that they currently had gingivitis, the percentage being highest in the youngest age group (6%). In both years there were no statistically significant differences between the age, education, and residence subgroups with regard to gingivitis: nearly 60% of those in all subgroups claimed that they had never had gingivitis. The proportions of those who had never experienced gingival bleeding were 54% in 1972 and 50% in 1990. During the observation period the youngest age group (15–24 years) was the only one in which the increment in self-recognized gingivitis was accompanied by a higher proportion experiencing gingival bleeding. The overall low prevalence of self-recognized gingivitis is at variance with the estimated periodontal treatment need according to Finnish clinical epidemiologic data. Our results indicate that knowledge concerning periodontal disease is still poor in Finland. □ *Periodontal disease; preventive dentistry; questionnaires; subsidization*

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Self-recognition of periodontal disease has been shown to be poor (1–4). Oral self-care skills are important in the prevention and treatment of periodontal disease (5), but to achieve and maintain a high level of oral hygiene require motivation as well as self-evaluation and perception of one's periodontal condition (6). On the other hand, high periodontal awareness alone seems not to result in appropriate periodontal health habits: behavioral changes require understanding, retention, and utilization of periodontal knowledge (1).

As in other industrialized countries, oral health in Finland has improved over recent decades (7–10). In spite of this overall improvement, however, oral health remains unequally distributed (7, 8, 10), as several individual and social environmental factors have been shown to hinder better utilization of dental services (11, 12). Hence discrepancies between clinically observed periodontal treatment need and actualized demand for care have been demonstrated (10, 11, 13).

The aim of this study was to evaluate periodontal awareness among adult Finns in 1990 compared with the situation in 1972.

Materials and methods

The material comprised two sets of data, both derived from two-stage stratified cluster samples, representing the Finnish population aged 15 years or more (1972, $n = 965$; 1990, $n = 1006$). Personal interviews using standardized questions were performed by trained interviewers. In 1972 a total of 732, and in 1990

a total of 853 dentate Finns were included (Table 1).

Two questions were put to the interviewees: 1) Do you think you currently have, or have earlier had, gingivitis? and 2) Do you currently experience, or have you earlier experienced, gingival bleeding? The variables were classified into three categories: awareness of current gingivitis and gingival bleeding, earlier gingivitis and gingival bleeding, and never had gingivitis and gingival bleeding.

Changes in self-recognized gingivitis and gingival bleeding between 1972 and 1990 were compared by dividing the proportion representing the observed prevalence figure in 1990 by that for 1972. When the result of this calculation equalled 1, the item had not changed over the observation period. A value greater than 1 indicated that the item had occurred more often in 1990 than in 1972, and vice versa if the value was less than 1.

The data were age- and sex-standardized. The figures describing changes in different subgroups were set on a logarithmic scale to clarify the time-sequential changes. Differences between the categoric variables were studied using the chi-square test.

Results

The interviewed study populations in 1990 and 1972 were similar with regard to sex, age, education, and residence (Table 1).

In 1990, 2% of the responding adult Finns stated that they currently had gingivitis, the percentage being

Table 1. Distributions of Finns interviewed in 1972 and 1990 with regard to sex, age, education and residence

| | 1972 | | 1990 | |
|----------------------|------|-----|------|-----|
| | n | % | n | % |
| Total | 965 | 100 | 1006 | 100 |
| Sex | | | | |
| Female | 499 | 52 | 526 | 52 |
| Male | 466 | 48 | 480 | 48 |
| Age | | | | |
| 15-24 years | 188 | 19 | 192 | 19 |
| 25-49 years | 429 | 45 | 463 | 46 |
| 50+ years | 348 | 36 | 352 | 35 |
| Education | | | | |
| Elementary school | 501 | 52 | 471 | 47 |
| Secondary school | 290 | 30 | 302 | 30 |
| High school graduate | 174 | 18 | 231 | 23 |
| Residence | | | | |
| Rural area | 468 | 49 | 402 | 40 |
| Small town | 293 | 30 | 362 | 36 |
| Large town | 204 | 21 | 241 | 24 |

highest in the youngest age group (6%). There were no statistically significant differences between the subgroups with regard to gingivitis in 1990: nearly 60% of the respondents in all subgroups claimed that they had never had gingivitis.

In 1990, a slight tendency towards an association between older age and never experienced gingival bleeding could be seen. Subjects with the highest education more often reported past or current gingival bleeding than those with only elementary education ($P < 0.05$) (Fig. 1).

In the youngest age group (15-24 years) the proportion of subjects who had never had gingivitis was

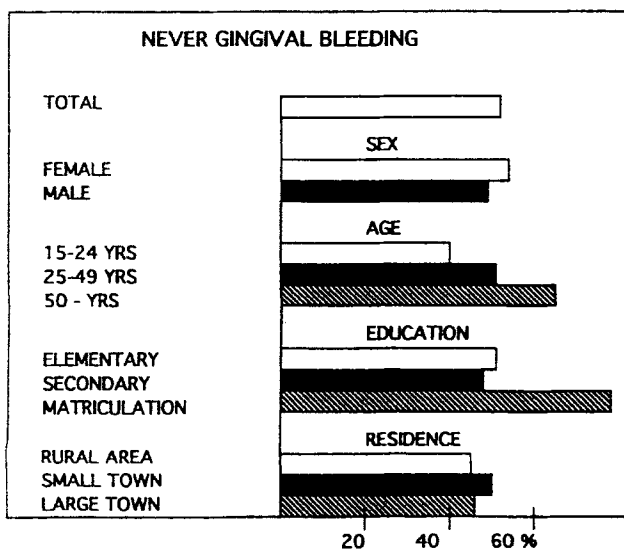


Fig. 1. Rate of never observed gingival bleeding among Finns in 1990 ($n = 853$) and the distribution with regard to sex, age, education, and residence.

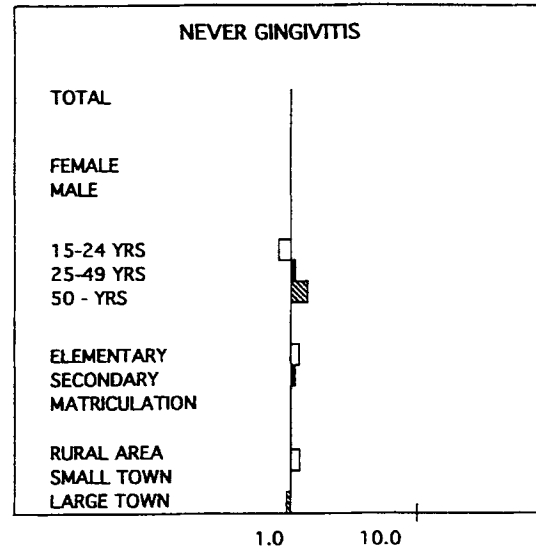


Fig. 2. Changes in the proportions of those who had never had gingivitis among Finns between 1972 ($n = 732$) and 1990 ($n = 853$) within different subgroups were compared by dividing the percentage representing prevalence of never having had gingivitis in 1990 by the percentage in 1972 (logarithmic scale).

greater in 1990 than in 1972, whereas in the older age groups this trend was not seen (Fig. 2). In addition, the youngest age group had experienced gingival bleeding more often in 1990 than in the 1972 survey (Fig. 3).

Discussion

This study comprised a representative sample of adult Finns. The two study populations (in 1972 and 1990) were similar in background variables and thus comparable.

The optimistic impression among older age groups of never having experienced gingival bleeding is at variance with Finnish epidemiologic data (10, 11, 13-15). Periodontal disease mainly progresses unnoticed, and most persons probably recognize it only when it reaches an advanced state. In accordance with earlier research (16, 17), the overall low awareness of periodontal conditions in our study indicates that the concept of periodontal disease is vague: people tend not to understand the connection between gingival bleeding and gingivitis or that gingivitis risks developing into severe periodontitis.

On the other hand, some studies indicate that people are not sufficiently informed about their periodontal conditions and possible treatment alternatives (3, 18). Dentists may not consider dental health education economically worthwhile, and health education tends not to be regarded as professionally challenging (19). According to Brady (1), 73% of American patients with periodontal disease did not know they had it, and 79% had not been informed by their dentist (1).

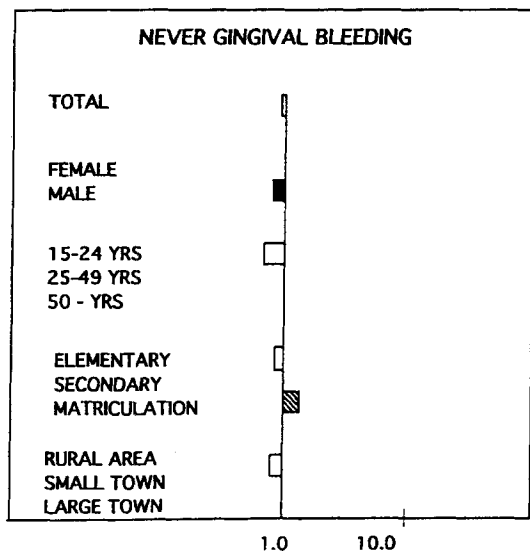


Fig. 3. Changes in the proportions of those who had never experienced gingival bleeding among Finns between 1972 ($n = 732$) and 1990 ($n = 853$) within different subgroups were compared by dividing the percentage representing prevalence of never having had gingival bleeding in 1990 by the percentage in 1972 (logarithmic scale).

According to Nyman (9), in line with epidemiologic data from other Nordic countries, the dental status of young Finns improved between 1976 and 1987 (9). During the observation period in our study, however, the youngest age group was the only one in which the increment in self-recognized gingivitis also was accompanied by an increased proportion of subjects who had experienced gingival bleeding. This may indicate that younger Finns had achieved better periodontal awareness by 1990.

Since the Public Health Act of 1972, dental care has been provided free-of-charge at community-based dental health centers to Finns less than 19 years old. Additionally, through the National Sickness Insurance Scheme, some costs of dental treatment are reimbursed to adults born after 1956. Although some Finnish municipalities are capable of organizing dental care for all their citizens, most adults in urban areas are obliged to attend non-subsidized practices. The improved knowledge in the youngest age group in our study may to some extent be explained by their access to an organized dental care scheme (20, 21).

The prevalence, extent, severity, and progression of periodontal disease is influenced by heredity, biology, physical environment, and lifestyle. Transmission of oral bacterial species associated with periodontal disease is also possible (22). Once periodontal disease is initiated, its progress is considered to be continuous and gradual without treatment intervention (23). Gingivitis appears almost exclusively as the first symptom of periodontal disease and is the most reliable single indicator of a periodontal disorder (17).

Gingival bleeding could easily be self-detected (17), but the public needs guidance in connecting it to periodontal disease (24). To prevent the development of periodontal problems, the ability to perceive gingivitis by improving knowledge is important. Awareness of periodontal conditions could be considered a potential health resource.

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