Health promotion and prevention of early childhood caries

A thesis submitted for the degree of Doctor of Philosophy

Dental School
The University of Adelaide
South Australia

by
Kamila Plutzer

May 2005

Supervised by Professor A John Spencer
Australian Research Centre for Population Oral Health (ARCPOH)
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Abstract

The prevention of avoidable diseases should be a key goal of health systems in developed countries. Health promotion is one of the strategies through which this goal could be achieved. The aim of this oral health intervention program "Cavity free children" was to prevent the development of severe early childhood caries (S-ECC).

Data about the prevalence of early childhood caries (ECC) among children younger than 4 years are not routinely collected in the child dental health surveys. However Wyne (1990) found the prevalence of ECC was 16.7% (non-cavitated lesions) and 2.6% (cavitated lesions) among 2-3 year olds in SA. Data from recent years of the Child Dental Health Survey indicate that caries experience is on increase. The figure for mean decayed, missing (due to caries) and filled primary teeth increased from 1.10 in 1997 to 1.44 in the year 1999 in 4 year olds (Armsfield et al. 2004). Reports on hospitalisation for treatment of oral disease of children younger than 4 years indicate that this problem is ongoing.

Purpose: The purpose of the study was to test the efficacy of an oral health promotion program (OHPP) for the parents of infants, starting with pregnant women, using a randomised controlled trial. The OHPP used anticipatory guidance to focus on the needs of each child during the first 18 months of life.

Methods: In total 649 nulliparous women were enrolled in the study. During the enrolment they were randomised into test and control groups, using Zelen’s design. Mothers in the test group (n = 327) received the first round of oral health promotion information at their enrolment in the study. They received the second round of information when their child was 6 months old and the third round when their child reached 12 months of age. This written oral health promoting material was mailed to their home address. After the second round of information test group mothers were randomised on the test A and test B groups. In test group A the oral health promotion information was reinforced through a phone interview, in contrast, test group B where no reinforcement took place. There was no contact with mothers (n = 322) in the control group from the time of their enrolment. At the age of 18 months, all children were examined by a dentist. Baseline data at the enrolment to the study, refusal to participate in the study, retention of participants in the study according to the socio-economic factors, data from two questionnaires (First Maternal Oral Health Survey, second Child’s Oral Health Survey), medical history, dental
examination, and responses of participants to the oral health promotion information were analysed. The differences in outcomes between the test and control groups, and the test A and test B groups were calculated.

**Results:** From a total of 649 nulliparous women enrolled in the study, after exclusions and losses to the study since enrolment, 441 children were examined at the age of 20 ± 2.5 sd months. The number of examined children in the test group was 232 and 209 in the control group. There were no statistically significant differences between the test and control groups at baseline and follow-up according to socio-economic characteristics. Using a case definition of S-ECC as one or more maxillary anterior teeth carious, the incidence of S-ECC in the test group was 1.7% and in the control group 9.6%. The overall incidence of S-ECC was 5.4%. The difference in the caries incidence between test and control group was statistically significant at p<0.001.

The phone call counselling to mothers in test group A received between six and 12 months of their child’s age did not influence the incidence of S-ECC (group A 1.6%, group B 1.8%).

The first-time mothers proved to be a group receptive to health information.

**Conclusion:** The statistically significant difference in the incidence of S-ECC between the test and control groups indicates high efficacy of the oral health promoting intervention, provided in the form of anticipatory guidance periodically mailed to the mother’s home address.