

**EFFECT OF CHLORHEXIDINE CONTAINING
VARNISH ON STREPTOCOCCUS MUTANS AND
LACTOBACILLI COUNT IN DENTAL PLAQUE
AMONG A GROUP OF VISUALLY HANDICAPPED
INDIVIDUALS**

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Thesis

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BY

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Dedication

I would like very much to dedicate this work to
my late father

Prof.Dr. Ahmad M.Kolkaila

former Dean of Faculty of Science, Tanta University

He was always the one who cared, supported and encouraged me

Even away with his body, still my shining example,

my first teacher and will always be within me

May GOD bless his soul

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INTRODUCTION

INTRODUCTION

It is now the responsibility of civilized society to provide every person with the opportunity of developing to his optimum potential. To do this, each person must be afforded the best health care as a part of the generic services available. Thus, we must insure that as a part of the health services, dentistry becomes a priority, a right not an after-thought precipitated by an emergency and handed out as charity. Optimum dental care is essential for all individuals, children as well as adults, enabling them to stand with their peers and affect a rightful place in society that will offer them dignity and self worth. (*Levine, 1980*).

A number of studies showed that, the mystery of oral health is more complex when considering the handicapped although the dental problems of the handicapped are not different than those of the non handicapped (*Full et al, 1977*).

Comprehensive dental care is the area of health most often neglected for the handicapped child. This probably results in part from the family's deep involvement with the child's medical and educational care, along with lack of knowledge relating to the importance of oral health care to the child's well-being. (*Canion, 1981*).

The common dental problems of caries and periodontal diseases are attributed to plaque in all patients. But, in handicapped, plaque formation can be modified by special factors such as physical disability

and low intelligence which inhibit the practice of adequate oral hygiene. Accordingly, there is a high correlation between the presence of plaque and periodontal disease and/or caries. (*Full et al, 1977 and Pool, 1981*).

Current evidence implicating micro-organisms in dental plaque as the primary aetiologic factor of caries and periodontal disease, has suggested that, chemotherapeutic agents could be effective in the prevention and control of these major dental infections (*Emilson et al, 1981*).

The use of antimicrobials in dentistry is wide spread. the best and most intensely investigated antibacterial substance is chlorhexidine (CHX) which has been used in both caries and periodontal disease prevention (*Huizinga et al, 1990*).

Chlorhexidine has a broad spectrum antibacterial activity. It is a potent antibacterial agent available for use in the oral cavity as a rinse, gel or varnish (*Gjeramo, 1989 and Scheie, 1989*).

Cleghorn and Bowden, (1989) reported that *Streptococcus mutans* and *Lactobacilli* have been shown to be closely associated with the formation and presence of dental caries in man. So, suppression of these micro-organisms in the oral cavity could result in caries reduction both in children and adults (*Petersson et al, 1991*).

It is well established that Strept. mutans is more sensitive to chlorhexidine than are many other oral micro-organisms. (*Emilson, 1977*). On using gels and rinsing solutions containing chlorhexidine, Strept. mutans was suppressed for various periods of time (*Schaeken et al, 1986*).

Varnishes for sustained release of chlorhexidine have been developed to achieve prolonged antibacterial action (*Balanyk et al, 1983; Balanyk and Sandham 1985 and Sandham et al, 1988*).

The main advantage of using chlorhexidine varnish over chlorhexidine gel or mouth rinse is that the effective agent can be applied on specific sites, thus diminishing side effects involved in the use of mouth rinse or gel applications, such as bad taste, irritation of the oral mucosa, and staining of teeth and tongue (*Schaeken et al, 1991a*).

The visually handicapped patient presents a special challenge to the dental health care team (*Greeley et al, 1976 and O'Donnell and Crosswaite, 1991*).

Storhaug, (1977) suggested that chemical plaque control may be the only possible answer to the handicapped oral hygiene problems and by using a safe and acceptable agent as chlorhexidine, this could offer many advantages for handicapped groups (*Francis et al, 1987*). Also, the development of chlorhexidine varnishes opens up new perspectives for prevention (*Keltjens et al, 1992*).

REVIEW OF LITERATURE