

UNIVERSITI TEKNOLOGI MARA

**A RANDOMISED CROSSOVER
TRIAL ON CAREGIVERS'
PERCEIVED MANNERISMS AND
THE PHYSIOLOGICAL
VARIATIONS IN BEHAVIOUR
GUIDANCE TECHNIQUES FOR
CHILDREN WITH SPECIAL
HEALTH CARE NEEDS DURING
DENTAL TREATMENT**

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ABSTRACT

Exploring caregivers' opinions regarding Papoose Board® (PB) in managing children with special health care needs (CSHCN) is critical upon identifying behaviour guidance application priorities. It is perceived that passive immobilisation with PB may cause physical distress and intense anxiety manifestations among children during dental treatment. This study aims (i) to compare the caregivers' acceptance, consent, and concern towards the usage of Papoose Board® and a combination of tell-show-do (TSD), distraction (D), and positive reinforcement (PR) for their children with special health care needs; (ii) to evaluate caregiver's attitude, acceptance, consent, and concern of Papoose Board® for children with special health care needs before and after dental treatment; (iii) to assess the caregivers' socioeconomic background, educational level, and previous dental experience on the usage attitude of Papoose Board® for their children with special health care needs, and; (iv) to investigate physiological variations in blood pressure, heart rate, and oxygen saturation level while utilising Papoose Board® and a combination of tell-show-do (TSD), distraction (D), and positive reinforcement (PR) on children with special health care needs. The registered crossover trial (ISRCTN57204958) involved 90 CSHCN who received standard dental care with two methods of behaviour guidance techniques sequentially, in which the exposure was randomised. Specifically, exposure A is a combination of basic behaviour guidance techniques (CBBGT), while exposure B is PB. Caregivers were required to complete a self-administered-paper-based questionnaire during pre- and post-intervention. The subject child's blood pressure, heart rate, and oxygen saturation level were measured at four different times. As a result, it was found that 88 caregivers aged between 30-58 years old and their children aged between 2-15 years old completed the sequence. Following that, 98.9% of the children were diagnosed with neurodevelopmental disorders, and 1.1% had a physical disability. Wilcoxon Sign Rank Test revealed no statistical difference between CBBGT and PB paired scores median of caregivers' acceptance ($p = 0.081$) and consent ($p = 0.546$), although a significant difference in concern was found ($p = 0.045$). The caregivers also showed a significant improvement in attitude ($p < 0.001$) toward the use of PB after observing the placement on their children. Moreover, physiological data revealed no significant changes when children were treated with PB or CBBGT. A comprehensive introduction of the passive immobilisation technique boosted caregivers' mannerisms towards PB utilisation on their CSHCN during dental treatment. PB is considered safe and has no discernible influence on the child's physiological variation.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

Individuals with special health care needs (SHCN) are susceptible to ineffective oral hygiene care and poorer periodontal status with untreated carious teeth (Alkhabuli et al., 2020). In a clinical scenario, providing dental treatment for patients with SHCN is often a challenge. Children with special health care needs (CSHCN) might sustained one or a combination of disabilities such as physical, mental, sensory, behavioural, cognitive, and/or emotional disabilities that restrict them from performing daily life activities (AAPD, 2021^a). They frequently show high anxiety levels and poor cooperation, which form a barrier to dental treatment (Dharmani, 2018). Dental procedures could be considered as a stressful event that can cause physiological changes associated with the fight-or-flight response, which denotes an inherent human reaction to stressful situations (Seligman et al., 2017). Studies on children with autism spectrum disorder (ASD) (Stein et al., 2014), down syndrome (DS) (Silva et al., 2020), and cerebral palsy (CP) (Tomasin et al., 2021) demonstrated that through biological and psychological parameter, higher stress level during routine oral care and/or dental treatment were prominent. This result can be attributed to the delay in the psychosocial, cognitive, and emotional development of individuals with SHCN who may exhibit stronger anxiety (Eickman et al., 2016). Behaviour guidance techniques (BGT) is also known as behaviour management techniques (BMT), which are the sets of procedures aimed to reduce dental anxiety, create a positive dental attitude, and allow quality oral health care to be performed efficiently (AAPD, 2021^b). Various BGT recommended by the American Academy of Paediatric Dentistry (AAPD) and European Academy of Paediatric Dentistry (EAPD) have enabled dentists to perform dental treatment on the uncooperative child and obtain their cooperation (AAPD, 2021^b; Roberts et al., 2010). However, some of the suggested techniques may not be effective for all children, particularly younger children and CSHCN (AAPD, 2021^a; AAPD, 2021^b).

Implementing techniques outlined in basic BGT should form the foundation for all behaviour guidance provided by the dentists (AAPD, 2021^b). However, due to diversity of attitudes and temperament in CSHCN, application of communicative behaviour guidance only was inadequate as the techniques required bi-directional communication