

UNIVERSITI TEKNOLOGI MARA

**MODELLING THE INFLUENCES OF
FAMILY FUNCTIONING ON THE
CARIES EXPERIENCE OF
CHILDREN WITH SPECIAL NEEDS**

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ABSTRACT

Background: WHO has estimated that around 1.3 billion individuals, representing 16% of the global population, live with a significant disability. One of the main concerns raised by this demographic is oral health inequalities. However, the burden of disease for this group in Malaysia has not been thoroughly explored, as well as the psychosocial pathway of oral diseases in this population. **Objectives:** This study aimed to assess the prevalence of dental caries among Children with Special Needs (CWSN) population based on the disability type, as well as investigate the impact of family functioning on their caries experience. Enamel fluorosis, periodontal status, dental erosion, dental trauma, and oral mucosal lesions were also assessed. **Methods:** CWSN aged 3 to 12-years-old who attended Community-Based Rehabilitation (CBR) centres were selected using a multistage sampling method for this cross-sectional study. A clinical examination according to WHO Oral Health Assessment Survey for Children was performed. The primary caregiver was requested to provide details regarding the sociodemographic background, oral health practices administered to the CWSN, and how these practices influence the CWSN's oral health-related quality of life (OHRQoL) using the Oral Health Impact Profile (S-OHIP (M)). Additionally, the caregiver was asked to report on family functioning using the McMaster Family Assessment Device (FAD). Ethics approval was obtained from the Universiti Teknologi MARA ethics committee (REC/03/2021 (MR/141)) and the Department of Social Welfare Malaysia (JKMM 100/12/5/2:2023/003, JKMM 100/12/5/2:2021/168). **Results:** The multiple disabilities group had the highest mean DMFT score of 0.95 ± 2.8 , while the physical disabilities group had the highest mean dmft score of 4.86 ± 5.8 . Almost half of the group had caries (48.4%). None of the participants exhibit dental fluorosis. The majority of the CWSN brush their teeth twice daily (74.6%), with the highest adherence found in children with learning disabilities. Functional Limitation and Physical Disability are the most impacted areas in these children's oral health-related quality of life, with mean scores of 1.23 (SD=1.63) and 1.15 (SD=1.41) respectively. None of the family functioning domains were associated with dental caries. Nevertheless, family functioning was associated with dental caries in the domains roles (OR: 2.42; 95% CI: 1.21-4.83), affective involvement (OR: 0.21; 95% CI: 0.53-0.80), and behaviour control (OR: 0.21; 95% CI: .05-0.93). The structural equation modelling (SEM) analysis revealed significant relationships in several pathways, indicating influential factors on dental caries: Parent's age demonstrated a significant association with the problem solving domain, which in turn influenced the occurrence of dental caries. Parent's gender was found to have a significant impact on the communication domain, subsequently affecting dental caries. The number of dependents exhibited a significant relationship with the communication domain, which was then linked to dental caries. Affective involvement showed a significant association with dental caries directly. **Conclusion:** The high prevalence of dental caries signals a considerable number of unmet treatment needs, highlighting the urgency for heightened focus on this population to bolster their overall health. Effective family functioning across domains such as problem solving, affective involvement, and communication could serve as protective measures against dental caries. The modelling highlights the intricate interplay of diverse parental and familial factors in shaping the prevalence of dental caries within the studied population, emphasizing the need for comprehensive approaches to address oral health disparities among the CWSN population.

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In conclusion, I would like to quote the Prophet S.A.W: "Whoever pursues a path in search of knowledge, Allah will make easy for him a path to paradise."

May Allah's blessings be upon us all."

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR’S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	xii
LIST OF FIGURES	xv
LIST OF ABBREVIATIONS	xvi
 CHAPTER 1 INTRODUCTION	 18
1.1 Research Background	18
1.2 Problem statement	20
1.3 Research questions	21
1.3.1 Primary Question:	21
1.3.2 Secondary Questions:	21
1.4 Objectives	22
1.4.1 Primary Objective:	22
1.4.2 Secondary Objectives:	22
1.5 Scope of study	23
1.6 Significance of study	23
 CHAPTER 2 LITERATURE REVIEW	 25
2.1 Disability	25
2.1.1 Defining the Children with Special Needs (CWSN)	25
2.2 Children with Special Needs (CWSN)	32
2.2.1 Prevalence	32
2.2.2 Malaysia context	34
2.3 Oral Health	36
2.3.1 Prevalence	36

CHAPTER 1

INTRODUCTION

1.1 Research Background

The World Health Organization (WHO) defines disability through 1) impairment in body structure or mental functioning, 2) activity limitations, such as difficulties in walking or sensory perception, and 3) participation restrictions in everyday activities, including work and social engagement (World Health Organization, 2013a). In the Malaysian context, the Persons with Disabilities (PWD) Act of 2008 characterizes 'special needs' as encompassing a range of disabilities that may impede full societal participation due to various barriers (Laws of Malaysia, 2008). This definition is further expanded by the Department of Social Welfare (DoSW), which categorizes disabilities into seven distinct groups: mental, hearing, visual, speech, physical, learning, and multiple disabilities (Department of Social Welfare, 2021).

The evolution of the concept of disability has been noteworthy in recent years, transitioning from a predominantly medical model to a more encompassing biopsychosocial paradigm (Macdonald, 2019). This paradigm shift acknowledges that disability transcends mere physical or mental impairments, recognizing the intricate interplay between an individual's health conditions and their environmental context. Such an understanding has rendered disability a pivotal focus within public health discourse. The relevance of this focus is accentuated by the increasing awareness of the myriad challenges confronting individuals with disabilities. These challenges encompass a spectrum of issues, from accessibility barriers and socio-economic inequalities to healthcare disparities (Babik & Gardner, 2021).

WHO has estimated that around 1.3 billion individuals, representing 16% of the global population, live with a significant disability (World Health Organization, 2023a). This statistic indicates an upward trend from earlier estimates, which suggested that about 15% of the world's population had some form of disability (World Health Organization, 2011). Similarly, the World Bank notes a higher prevalence of disability in developing countries, indicating a global pattern of disability distribution (The World Bank, 2023). In relevant to CWSN, a United Nations Children's Fund (UNICEF) 2020 report specifies that there are at least 93 million Children with Special Needs (CWSN)