



UNIVERSITI PUTRA MALAYSIA

***PARENTS' KNOWLEDGE, ATTITUDE AND PRACTICE OF ORAL
HEALTH AND ITS ASSOCIATION WITH ORAL HEALTH STATUS OF
ARABIC PRE-SCHOOL CHILDREN IN THE KLANG VALLEY,
MALAYSIA***

ALSHARIF, MOHAMMED KHALID S

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AND ITS ASSOCIATION WITH ORAL HEALTH STATUS OF ARABIC PRE-
SCHOOL CHILDREN IN THE KLANG VALLEY, MALAYSIA**

By

ALSHARIF, MOHAMMED KHALID S

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia in
Fulfilment of the Requirements for the Degree of Master of Science**

December 2020

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DEDICATION

This thesis is dedicated to Almighty Allah, Prophet Muhammad (SAW), my father and my lovely mother and to my family and friends who have supported me through this journey to success.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

PARENTS' KNOWLEDGE, ATTITUDE AND PRACTICE OF ORAL HEALTH AND ITS ASSOCIATION WITH ORAL HEALTH STATUS OF ARABIC PRE-SCHOOL CHILDREN IN THE KLANG VALLEY, MALAYSIA

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December 2020

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Oral health diseases among pre-school children such as tooth decay is a global public health problem and influence the overall health of children. Parental oral health knowledge, attitude and practice have a direct effect on pre-school children, since the pre-school children may not be able to fully express their emotions orally. This study aimed to determine the level of parents' knowledge, attitude and practice of oral health and its association with the oral health status of pre-school children in Arabic pre-schools in Klang Valley, Malaysia. A cross-sectional study was conducted among pre-schoolers with proportional stratified sampling from selected five Arabic pre-schools. 400 self-administered questionnaires in Arabic language were distributed among the Arabic parents. The questionnaire included five sections on sociodemographic characteristics, socioeconomic characteristics, parental oral health knowledge, attitude and practice, eating and oral hygiene habits of children and accessibility of dental services. The questionnaire had acceptable internal consistency ($\alpha=0.82$). In this study, the internal consistency value was ($\alpha=0.78$) and the test-retest reliability correlation coefficient showed a good reliability level (84%). SPSS version 23 was used to conduct Chi-Square test, Fisher's exact test and binary logistic regression analysis for data analysis. Completed questionnaires were returned with a response rate of 95%. Among a total of 363 children with a median age of 4 years, 54.8% were females. Overall, 42.4% of the children had dental caries, 9.6% of them had gingivitis and 19.6% reported to have halitosis. Marital status, monthly income, accessibility to dental services, the gender of children, name of schools, start to brush the teeth and the number of times of brushing every day, visit the dentist regularly were factors significantly associated with the oral health status of children ($p<0.05$). Besides, parental knowledge, attitude and practice of oral health were significantly associated with the parent-reported oral health status of children ($p<0.05$). In conclusion, this study established that more than 50 % of the children found to have poor oral health. In order to mitigate these problems, effective oral health programs designed to change dietary habits and dental screening of children in this age group are necessary.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PENGETAHUAN IBU BAPA, SIKAP DAN AMALAN PENJAGAAN
KESIHATAN MULUT DAN KAITANNYA DENGAN STATUS KESIHATAN
MULUT ANAK-ANAK MEREKA DI PRA-SEKOLAH ARAB YANG
TERLETAK DI KLANG VALLEY, MALAYSIA**

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Gejala kesihatan mulut di kalangan kanak-kanak pra-sekolah seperti kerosakan gigi merupakan antara masalah kesihatan awam berperingkat global yang mempengaruhi kesihatan kanak-kanak secara menyeluruh. Pengetahuan, sikap dan amalan penjagaan kesihatan mulut oleh ibu-bapa secara tidak langsung dipercayai dapat memberikan kesan kepada anak-anak pra-sekolah ini kerana mereka berkemungkinan tidak dapat mengekspresikan emosi mereka melalui pendekatan lisan. Kajian ini telah dijalankan bertujuan untuk menentukan tahap pengetahuan, sikap dan amalan penjagaan kesihatan mulut oleh ibu-bapa dan kaitannya dengan status kesihatan mulut kanak-kanak di beberapa buah pra-sekolah Arab yang terletak di Lembah Klang, Malaysia. Kajian keratan rentas telah dilakukan di kalangan pelajar pra-sekolah dengan pensampelan berstrata berkadar dari lima buah pra-sekolah orang Arab yang terpilih. Sebanyak 400 helai kertas kajian soal selidik dalam bahasa Arab yang dikendalikan sendiri telah diedarkan di kalangan ibu bapa berbangsa Arab. Soal selidik ini merangkumi lima bahagian mengenai ciri sosiodemografi, ciri sosioekonomi, pengetahuan ibu bapa tentang kesihatan mulut, sikap dan amalan, tabiat pemakanan dan kebersihan mulut kanak-kanak dan aksesibiliti terhadap perkhidmatan pergigian. Soal selidik ini mempunyai konsistensi dalaman yang dapat diterima ($\alpha = 0.82$). Dalam kajian ini, nilai konsistensi dalaman adalah ($\alpha = 0.78$) dan pekali kolerasi kebolehpercayaan ujian-ujian semula telah menunjukkan tahap kebolehpercayaan yang baik (84%). SPSS versi 23 telah digunakan bagi melakukan ujian Chi-Square, ujian tepat Fisher dan analisis regresi logistik binari bagi tujuan menganalisis data yang diperolehi. Soal selidik yang lengkap telah dikembalikan dengan kadar respons sebanyak 95%. Di antara sejumlah 363 orang kanak-kanak yang rata-ratanya berusia 4 tahun, 54.8% daripadanya adalah wanita. Secara keseluruhan, 42.4% kanak-kanak telah mengalami karies gigi, 9.6% dari mereka telah mengalami keradangan gusi dan 19.6% dilaporkan telah mengalami nafas berbau (halitosis). Status perkahwinan, pendapatan bulanan, akses kepada perkhidmatan pergigian, jenis jantina anak, nama sekolah, bila mereka mula menggosok gigi dan

berapa kali mereka memberus gigi setiap hari dan kekerapan untuk berjumpa dengan doktor gigi adalah faktor yang sangat berkaitan dengan status kesihatan mulut kanak-kanak ($p < 0.05$). Selain itu, tahap pengetahuan ibu bapa, sikap dan amalan penjagaan kesihatan mulut telah dilaporkan sangat berkaitan secara signifikan dengan status kesihatan mulut anak-anak ($p < 0.05$). Kesimpulannya, kajian ini telah membuktikan bahawa lebih daripada 50% kanak-kanak didapati mempunyai kesihatan mulut yang buruk. Bagi mengurangkan masalah ini, program berkenaan kesihatan mulut yang diobjektifkan untuk mengubah tabiat pemakanan dan kesedaran untuk menitikberatkan keperluan melakukan pemeriksaan gigi bagi kanak-kanak di dalam usia kumpulan ini perlu dirancang sebaiknya.



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This is to confirm that:

- The research conducted and the writing of this thesis was under our supervision;
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LIST OF ABBREVIATIONS

A	Level of significance
IBM	International Business Machines
SPSS	Statistical Package for the Social Sciences
P-value	Probability value
aOR	Adjusted odds ratio
CI	Confidence interval
KAP	Knowledge, attitude and practice
ECC	Early childhood caries
WHO	World health organization
S-ECC	Severe early childhood caries
JKEUPM	Ethical Committee for Research Involving Human Subjects of Universiti Putra Malaysia
IQR	Inter quartile range
ND	Normaly distributed
MYR	Malaysian Ringgit
NND	Not normaly distributed
Sig	significant
df, <i>df</i>	Degrees of freedom
IMAS	International Modern Arabic School
n	Estimated sample size
vs	versus
e.g.	For example
χ^2	Chi-square
R^2	R square
RM	Malaysian rinngit
%	Percentage
GMIS	Global modern international school

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Oral health status at an early age is of vital importance for the growth, general health and well-being of children (Kassebaum et al. 2015). Epidemiological previous studies have reported that there was a high prevalence of oral health problems like dental caries among the pre-school children which represent a costly burden to health care services (Mahmoud et al. 2017; Seow 2012; Al Salami et al., 2018). There is extensive evidence supporting the fact that the oral health problems which include permanent tooth caries, gingivitis and halitosis are significantly associated with the condition of the deciduous teeth, indicating the importance of understanding the risk factors for oral health problems in the first years of life (Al Salami et al., 2018; Frencken et al., 2017). Majority of oral health problems like dental caries and gingivitis are preventable (Frencken et al., 2017).

Children's behaviour usually follows the trend in the family they grow in. As such, parent's behaviour, particularly that of the mother, has a substantial effect on children's health (Case & Paxson, 2002). Therefore, the role of parents/caregivers is of paramount importance especially during the initial few years of their lifetime. Parents must not leave their children even during their pre-school stage because they still provide their children with good oral care to ensure a good outcome in their oral health status (Dabawala et al., 2017). Parents introduce the practice of tooth brushing to their children. This trend usually starts emerging during their early childhood and later the offspring inculcate that habit in their life (Khadri et al., 2010). There have been significant improvements in most of the developed countries concerning the oral health of early developing children, however, oral health problems still exist and are affecting quite a number of children around the globe (Frencken et al., 2017).

Oral health problems among pre-school children are significantly associated with many risk factors, including biological, environmental and socio-behavioural factors that may contribute to the initiation and progression of these problems like caries and gingivitis which can negatively affect the quality of life and it provides a greater tendency to decay and to lose permanent teeth later (Azimi et al., 2018; Jain et al., 2014). A study done among pre-school children have conducted that high consumption of sucrose, high sugar intake, drinking soda or soft drink and frequent snacking were associated with dental caries (Al Salami et al., 2018).

The oral health of children is affected by their parent's dental knowledge, attitudes and perception (Bonanato et al., 2009; Gomes et al., 2015a; Haghaghian & Zeraatkar, 2017; Hooley et al., 2012). Likewise, parent's oral health behaviour and lifestyle are linked to the oral health of their children (Hooley et al., 2012). As such, the quality of the children's oral health status can be greatly influenced. Poor oral health can lead to the

child's physical poor development, weight loss, poor self-esteem as well as absenteeism from educational activities leading to poor performance (Low et al., 1999; Mohammadi & Kay, 2012). The dental health problems in Malaysia are not different from the above-mentioned burdens.

Moreover, parental aspects such as mother's level of education, age, occupation, practice and attitude, are known to cause an improvement of their children's health indirectly (Dabawala et al., 2017; Gomes et al., 2015b). Adequate oral health care and regular visits to the dentist are a good sign of parents' oral health concerns to their children (Camargo et al., 2012). Parents' role is the key decision-makers in child health care (Talekar et al., 2005b).

Studies between pre-school children's dental health and parental knowledge, attitude and perceptions are limited. There seem to be many studies done on children oral health related to their parent's knowledge, behaviours and belief (Hooley et al., 2012; Ji, Zhang, Wang, & Chang, 2016; Kanemoto et al., 2016; Khodadadi et al., 2016; S Kumar et al., 2017; Pan, et al., 2017a). However, these studies are not evidently clear as to whether differences in knowledge, attitude and beliefs are linked to changes in the oral health of a child. Besides, there are limited pre-school-related studies in the literature that identified the role of parents on their children dental health status. Hence, our study aims to evaluate the relationship between parental influences such as dental health awareness, attitude and perceptions and their children's oral health.

1.2 Problem Statement

Globally, Oral health problems are considered a major public health concern, and the emphasis is given to the pre-school children as it is a critical determinant of potential oral health (Bennadi et al., 2015). Children's oral health problems including dental caries and other dental diseases are identified during pre-school years; thus, the oral health patterns are formed in children under 6 years (Al Salami et al., 2018). According to the World Health Organization, 60–90% of pre-school children have oral health problems specifically cavities (Petersen, 2003). Studies in the Middle East including Arab countries, showed that there is a rise in the incidence of dental-related traumatic injuries, varying from 16-40% and 4-33% among 6-year-old and 12-14-year-old children respectively (Al-Malik et al., 2001; Petersen, 2003).

Although frequent consumption of sugary foods and beverages, poor oral hygiene, and inability to access of dental services have been reported as risk factors of poor oral health status (Kierce et al., 2016), parental role and parental's knowledge, attitudes and practice related to oral health are undeniable, where parent's role plays significantly in ensuring the oral hygiene of their children. Previous literature suggests that parents' knowledge, attitudes and practice play a role in the control, management and care of oral diseases in their children, or in the unintended exacerbation of conditions (Sohn et al., 2008b; Svensson et al., 2016; Pan et al., 2017a). Several studies concluded that parents may require sensitization to the oral health of their children due to possible lack of knowledge,

and negative attitudes (Santhosh et al., 2016; Kumar et al., 2017; Vermaire & van Exel, 2018).

Moreover, although previous studies reported the association between the oral health status of children and oral hygiene and eating habits of the children, the social characteristics of parents, this association is still an argumentative subject (Martins et al., 2015). The former include unhealthy diet, poor oral hygiene, colonization of microorganisms, and feeding habits while the later comprise a low level of parental education, low socioeconomic status and lack of awareness about the dental disease (Hallett & O'Rourke, 2003). The presence of these associated factors mentioned above will affect the pre-school children probably cause dental pain and tooth loss causing difficulties to the children. In addition, oral health has so many effects on the body clinically (Li et al., 2000; Linden et al., 2013; Bourgeois et al., 2019). Thus, this study aimed to determine whether there is a significant association between the oral health status and the biological and social risk factors of the children and their parents.

The pre-school children are at risk of exposure to an oral health problem such as dental caries more than others. Parent's role is paramount in this age as they serve as the caregivers of oral health to their children (Al Salami et al., 2018). Most parents come to Malaysia to pursue a higher education level or get hired into high skilled jobs. Thus, this may lead to neglect of caring for their children, as most parents are busy with their studies or work. However, more research is needed to identify the children's oral health status and its association with the risk factors.

The Arabic community in Malaysia is one of the largest compared to other nationalities. The Klang Valley area is one of the largest regions in Malaysia that witnesses a gathering of the Arabic community, and there are many schools in this area (Aras & Ekim, 2015). Indeed, this issue requires concerted action to identify its magnitude and determine how the pre-school children are impacted. This study aimed to determine the children's oral health status and document any significant factors associated with the risk of oral health problem among Arabic children in Malaysia. It is of extreme importance for the children and their families to be aware of this relationship, so that any dental problems can be recognized, and treated early. This study's need has been motivated by the apparent lack of information and data on the oral health status among Arabic pre-schools children in Malaysia.

1.3 Significance of Study

The rapid progressive development of the communities leads to many changes in our lifestyle which in turn increase our daily requirements, add more struggle and conflict, this creates a suitable environment for developing many progressive illnesses, oral health problem such as dental caries is one of them. Therefore, this study may be able to close the gap in the existing literature that seems to be scared in regard to the parental factors on oral health specifically among Arabs. Identifying impart of the parents on their children's oral health will help agencies, ministries and other non-governmental

organizations in creating awareness to the parents on how to prevent oral diseases due to negligence or lack of proper knowledge or due to some attitude of parents. This will prevent oral diseases in the children at pre-schools and the prevalence rate of dental caries or decay will reduce to the barest minimum in the society. Further to this, the data generated during this study will assist as an orientation/reference to the school authorities, non-governmental organizations and researchers in planning effective intervention programs to drastically reduce the prevalence of oral problems among pre-school students. It will hopefully improve the health of these subjects.

1.4 Research Questions

- a) What is the level of parental knowledge, attitude and practices of oral health of their children in Arabic pre-school in Klang Valley, Malaysia?
- b) What is the level of the oral health status of pre-school children in Arabic Pre-school in Klang Valley, Malaysia?
- c) What are the factors associated with the oral health status of pre-school children in Arabic pre-schools in Klang Valley, Malaysia?
- d) What are the predictors of the oral health status of pre-school children in Arabic Pre-school in Klang Valley, Malaysia?

1.5 Study Objectives

1.5.1 General Objective

The main objective of this study is to determine the level of knowledge, attitude and practice of parents and its association with the oral health of pre-school children in Arabic pre-schools in Klang Valley, Malaysia.

1.5.2 Specific Objectives

The specific objectives of this study are to:

- a) To determine the oral health status of the children in Arabic pre-schools in Klang Valley, Malaysia.
- b) To determine the sociodemographic characteristics, socioeconomic characteristics, parental factors (knowledge, attitude and practice of oral health), children factors (eating behaviour of children, dental hygiene of children) and accessibility of dental services.
- c) To determine the association between the oral health status of children and
 - i. Sociodemographic characteristics.

- ii. Socioeconomic characteristics.
 - iii. Parental factors (knowledge, attitude and practice of oral health).
 - iv. Children factors (eating behaviour of children, dental hygiene of children).
 - v. Accessibility of dental services.
- d) To determine the predictors of the oral health status of the children in Arabic pre-schools in Klang Valley, Malaysia.

1.6 Research Hypotheses

- Ho:1. There is no significant association between the oral health status of the children and sociodemographic, socioeconomic characteristics and accessibility of dental services in Arabic pre-schools in Klang Valley, Malaysia.
- Ho:2. There is no significant association between the oral health status of the children and parental knowledge, attitude and practice of oral health in Arabic pre-schools in Klang Valley, Malaysia.
- Ho:3. There is no significant association between the oral health status of the children and eating behaviour and dental hygiene of children in Arabic pre-schools in Klang Valley, Malaysia.
- Ho:4. There are no predictors of the poor oral health status of the children in Arabic pre-schools in Klang Valley, Malaysia.

1.7 Definition of Terms

Pre-school

A pre-school is also termed nursery school, pre-primary school, playschool or generally refers to as kindergarten, is a school for the educating very young children (five years of age and younger). Such schools are learning space for early childhood education before enrolling in formal schools. They provide childcare with little educational benefits. It is operated privately and publicly owned by the government. There are two types of institutions that operate as pre-school i.e. childcare centres that enrol children below four years old and the kindergartens which enrol children between the ages of 4 plus through 5 plus.

Oral health

Oral health is also known as dental health, can be defined as the proper care of health in our teeth, gums and mouth in general. Oral health is essential for public health and quality of life. Mouth disease, oral and throat cancer, oral infection, sores, gum disease, tooth decay, tooth loss and other diseases disorders that limit a person's ability to bite and chew and even affect his/her psychological wellbeing (Paula et al., 2015).

Knowledge

Knowledge is someone's familiarity, perception, or comprehensions, such as facts (propositional knowledge), ability (procedural knowledge), or objects (acquaintance knowledge) (Taiwo et al., 2012).

Attitude

This is a relatively permanent group of belief towards an object, subject, or concept, which influences an individual to act in the response of their preferred manner (Sharda & Shetty, 2008).

Oral health practice

This is an action or practice carried out by individuals to safeguard, promote, or sustain good oral health status and prevent oral diseases. This could be undertaken by practising proper tooth brushing techniques and moderate sugar consumption among other practices of oral care (Taiwo et al., 2012).

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