



UNIVERSITI PUTRA MALAYSIA

***FACTORS AFFECTING KNOWLEDGE, ATTITUDE AND PRACTICES
RELATED TO EARLY CHILDHOOD CARIES AMONG MOTHERS OF
ARABIC SCHOOL CHILDREN IN KLANG VALLEY, MALAYSIA***

NAJLA'A SALAMEH MOHAMMED (AL-HARFI AL-BLUWI)

FPSK(M) 2016 9



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

March 2016

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DEDICATION

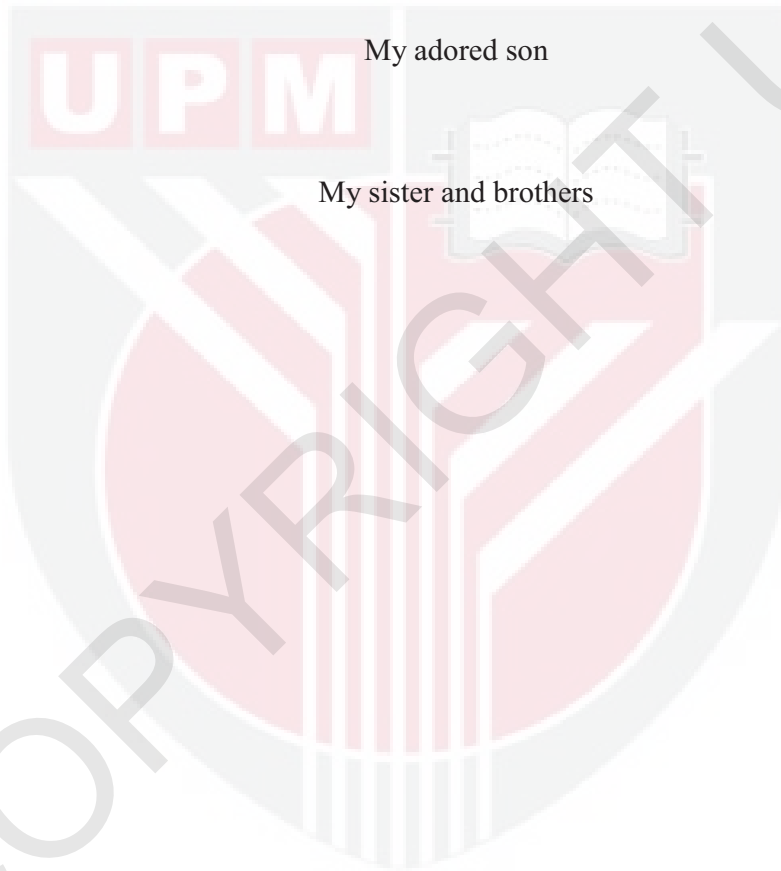
This thesis is dedicated to:

My beloved parents

My dearest husband

My adored son

My sister and brothers



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

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By

NAJLA'A SALAMEH MOHAMMED (AL-HARFI AL-BLUWI)

March 2016

Chairman : Associate Professor Nor Afiah Binti Mohd Zulkefli, PhD
Faculty : Medicine and Health Sciences.

Introduction: Oral health of the child means more than just having good and healthy teeth. Early Childhood Caries (ECC) refers to rampant dental caries in pre-school children. It can affect the child both physically and psychologically. Many factors can affect the knowledge, attitude and practice of mothers about prevention of ECC.

Objectives: To study the knowledge, attitude and practice on ECC and its associated factors among Arabic mothers of preschool and primary school children in Arabic schools that are registered in the Ministry of Education Malaysia in Klang Valley.

Methodology: This was a cross sectional study conducted among 518 mothers of primary and preschool children of all Arabic schools in Klang Valley that are registered with the Ministry of Education Malaysia from December 2014 to February 2015. The mothers were chosen by using simple random sampling. Mothers that fulfilled the inclusion criteria were recruited for the study. Validated and reliable questionnaire were used in this study. Knowledge, attitude and practice were the dependent variables whereas socioeconomic characteristics, tooth care, dental fears and family factors were the independent variables. Chi-square test and binary logistic regression were used for data analysis.

Results: The response rate was 87.6%. The majority of mothers were in the age group between 30 and 39 years old, living in Selangor, married, housewives, and have three to four children. The level of good knowledge on ECC among mothers from this study was 49.1%; positive attitude 46.6% and 37.8% of mothers had good practice on ECC. The predictors of good knowledge on ECC were mothers with >4 children (AOR=3.386; 95% CI: 1.779-6.447), have no fears originating from community believes (AOR=1.575; 95% CI: 1.000-2.480), have no fears of extraction (AOR=2.845; 95% CI: 1.443-5.608), and have twice daily tooth brushing habits (AOR=1.989; 95% CI: 1.266-3.126). Predictors of positive attitude were mothers with post graduate level (AOR=2.024; 95% CI: 1.287-3.184), attended infant oral health education program (AOR=2.444; 95% CI: 1.325-4.506), and good knowledge level (AOR=2.479; 95% CI: 1.600-3.843). On the

other hand, having no fears originating from community believes was a protective factor of positive attitude (AOR=0.575; 95% CI: 0.369-0.896). However, predictors of good practice were mothers with >34 years old (AOR=4.403; 95% CI: 2.009-9.650), attended infant oral health education program (AOR=2.444; 95% CI: 1.085-5.506), good knowledge level (AOR=1.835; 95% CI: 1.093-3.080), and positive attitude level (AOR=4.605; 95% CI: 2.222-9.541).

Conclusion: Majority of mothers' level of good knowledge on ECC, positive attitude towards ECC and good practice on ECC were poor. Preventive programs targeted on mothers who are 34 years old or less, have bachelor degree or less, housewives, with family income less than RM 6000, have four children or less, have not attended any infant oral health education program and have dental fears should be developed.

Keywords: Early Childhood Caries, Mothers, Knowledge, Attitude, Practice.

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

**FAKTOR MEMPENGARUHI PENGETAHUAN, SIKAP DAN AMALAN
TERHADAP KARIES AWAL KANAK-KANAK DI KALANGAN IBU KANAK-
KANAK SEKOLAH ARAB BERDAFTAR DI KLANG VALLEY**

Oleh:

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Pengerusi : Profesor Madaya Nor Afiah Binti Mohd Zulkefli, PhD
Fakulti : Perubatan Dan Sains Kesihatan

Pengenalan: Kesihatan oral kanak-kanak bermakna lebih daripada hanya mempunyai gigi yang baik dan sihat. Karies awal kanak-kanak (ECC) adalah karies gigi yang berleluasa pada kanak-kanak pra-sekolah. Ia boleh memberi kesan kepada kanak-kanak dari segi fizikal dan psikologi. Banyak faktor boleh mempengaruhi pengetahuan, sikap dan amalan ibu tentang pencegahan ECC.

Objektif: Mengkaji pengetahuan, sikap dan amalan mengawal ECC dan faktor berkaitan dengan isu ini di kalangan ibu kanak-kanak Arab peringkat pra-sekolah dan sekolah rendah di sekolah Arab yang berdaftar di Kementerian Pendidikan di Klang Valley.

Kaedah: Kaedah yang digunakan adalah kajian analisis keratan rentas merankumi 518 ibu kanak-kanak sekolah rendah dan prasekolah di semua sekolah Arab yang berdaftar di Kementerian Pendidikan di Klang Valley. yang dikumpulkan mulai Disember 2014 hingga Februari 2015. Kajian ini menggunakan soal selidik yang disahkan dan dipercayai. Pengetahuan, sikap dan amalan ialah pembolehubah bersandar manakala ciri-ciri sosio-ekonomi, penjagaan gigi, keseimbangan pergigian dan faktor keluarga merupakan pembolehubah bebas. Chi-kuasa dua dan logistik regresi digunakan untuk menganalisa data.

Hasil: Kadar respon ialah 87.6%. Majoriti kanak-kanak adalah dalam kumpulan umur berusia antara 30 dan 39 tahun, tinggal di Selangor, berkahwin, suri rumah, dan mempunyai 3-4 orang anak. Menurut kajian ini tahap pengetahuan yang baik terhadap (ECC) di kalangan kanak-kanak adalah 49.1%; sikap positif 46.6% dan 37.8% daripada kanak-kanak menunjukkan amalan baik kepada ECC. Peramal pengetahuan yang baik kepada ECC adalah kanak-kanak mempunyai >4 orang anak (AOR=3,386; 95% CI: 1,779-6,447), tidak mempunyai rasa takut yang berasal daripada kepercayaan masyarakat (AOR=1,575; 95% CI: 1,000-2,480), tidak mempunyai rasa takut mencabut gigi (AOR=2,845; 95% CI: 1,443-5,608), dan mempunyai tabiat memberus gigi dua kali sehari (AOR=1,989; 95% CI: 1,266-3,126), (R^2 Nagelkerke ini=0,197). Peramal sikap positif adalah kanak-kanak di peringkat pasca siswazah (AOR=2,024; 95% CI: 1,287-

3,184), yang menghadiri program pendidikan kesihatan oral bayi (AOR=2,444; 95% CI: 1,325-4,506), dan tahap pengetahuan am yang baik (AOR=2,479; 95% CI: 1,600-3,843). Sebaliknya, tidak mempunyai rasa takut yang berasal daripada kepercayaan masyarakat merupakan faktor pelindung sikap positif (AOR=0,575; 95% CI: 0,369-0,896), (R^2 Nagelkerke ini=0,155). Walau bagaimanapun, peramal amalan baik adalah kanak-kanak dalam golongan >34 tahun (AOR=4,403; 95% CI: 2,009-9,650), telah menghadiri program pendidikan kesihatan oral bayi (AOR =2,444; 95% CI: 1,085-5,506), mempunyai tahap pengetahuan yang baik (AOR=1,835; 95% CI: 1,093-3,080), dan tahap sikap yang positif (AOR=4,605; 95% CI: 2,222-9,541).

Kesimpulan: Majoriti ibu tidak mempunyai tahap pengetahuan yang baik mengenai ECC, mereka tidak mempunyai sikap yang positif terhadap ECC dan tahap amalan baik ECC adalah lemah. Program pencegahan harus menasaskan ibu muda yang berumur 34 tahun ke bawah, mencapai tahap sarjana muda atau kurang, suri rumah, mempunyai pendapatan keluarga kurang daripada RM 6000, mempunyai empat anak atau kurang, tidak menghadiri sebarang program oral pendidikan kesihatan bayi dan rasa takut mengenai isu pergigian .

Kata kunci: Karies Awal Kanak-kanak, Ibu, Pengetahuan, Sikap, Amalan.

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LIST OF ABBREVIATIONS

AOR	Adjusted Odd Ratio
β	Beta
CI	Confidence Interval
Df	Degree of Freedom
DMFT score	Decayed Missing Filled Teeth score
ECC	Early Childhood Caries
Exp(B)	Exponentiation of the β coefficient
IDR	Incidence Density Ratios
KAP	Knowledge, Attitude and Practice
MOH	Ministry of Health
RM	Ringgit Malaysia
ROC curve	Receiver Operating Characteristic curve
SE	Standard Error
S-ECC	Severe Early Childhood Caries
UAE	United Arab Emirates
WHO	World Health Organization
WP	Wilayah Persekutuan
χ^2	Chi-square

CHAPTER 1

INTRODUCTION

1.1 Background

Early Childhood Caries (ECC) is relatively a new term. It refers to rampant dental caries in pre-school children (Tinanoff, & O'Sullivan, 1997). ECC is defined as the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child age 71 months of age or younger (Guideline on Caries-risk Assessment and Management for Infants Children and Adolescents, 2013).

ECC is the most widespread chronic disease in children (Douglass, Douglass, & Silk, 2004). It is a serious health problem in both developing and developed countries (Livny, Assali, & Sgan-Cohen, 2007). Up till now, ECC is considered to be at epidemic proportions in the developing countries. For instance, in Syria, Lebanon, Egypt, and the United Arab Emirates the prevalence of ECC was found to be between 31% and 74% (Abu Hamila, 2013; Qadri, Nourallah, & Splieth, 2012; Chedid, Bourgeois, & Kaloustian, 2011; Hashim, Williams, & Thomson, 2011). In Malaysia the figure is alarming, this is because the national oral health surveys showed that the prevalence of ECC of five year-old and a six-year-old pre-school children was found to be 74.5% in 2007 (Oral Health Division, 2009).

Many factors contribute to ECC. Commonly caries risk factors are grouped into five groups; Biological, behavioural, socio-economic, clinical risk factors and child's temperaments. Biological factors include cariogenic bacteria levels, and the level of caries activity of the mother. The behavioural factors include sugar intake, food practices, night time bottle feeding, and frequent breastfeeding. However, socio-economic factors include family income, education level of the parents, and minority status. Moreover, clinical factors include the presence of plaque, and enamel defects (Çolak, Dülgergil, Dalli, & Hamidi, 2013). On the other hand, Child's temperaments include innate personality or behavioural style (Quinonez, Santos, Wilson, & Cross, 2001).

A multi-factorial approach is required for preventing ECC. This multi-factorial approach stresses on the role of health care providers to provide mothers with good dietary practice guidelines. In addition, it emphasises the importance of educational programs. Dental health programs have shown to be determining factors in the improvement of dental health standards (Kirtilogu, & Yavuz, 2006; Al Banyan, Echeverri, Narendran, & Keene, 2000). Moreover, mothers also play an important role in this multifactorial approach (Robert, 2014).

In general, many factors influence the knowledge, attitude and practice of mothers on ECC. Socio demographic characteristics of mothers such as age of the mother (Jain,

Oswal, & Chitguppi, 2014), marital status (Murshid, 2006), ethnicity, area of residence (Williams, White, & Gatrell, 2002), education level, family income (Jain et al., 2014) occupation (Attas, 2007) and number of offspring were found to affect mothers' knowledge attitude and practice on ECC. Knowledge, attitude and practice (KAP) was also shown to be linked to education programs (Ramazani, Zareban, Ahmad, & ZadSirjan, et al., 2014), dental fears (Akpabio, Klausner, & Inglehart, 2008), tooth care (Ru-Shing, Shun-Te, Hong-Sen, & Szu-Yu et al., 2014), and family factors (Chhabra, & Chhabra, 2012).

Treatment of ECC is essential and can be accomplished through different types of intervention. The type of the intervention depends on the progression of the disease, the age of the child, along with the social, behavioural, and medical history of the child (Çolak et al., 2013).

Nationwide nearly 6.1% of youngsters have unmet dental needs compared to 1.9% who have unmet need for medical care (Waldman, 1998). In Malaysia in the year 2007, the utilization of oral health care facilities was 19.7% (Ministry of Health Malaysia, 2007). In the Arabic world, the access and the utilization of health and oral health services continue to be a serious concern to the health care systems of the Arab countries (Kronfol, 2012).

ECC can affect the child both physically and psychologically. The short term consequences of ECC may include pain, infection, sleep disturbance and the susceptibility to malocclusion. On the other hand, some of the long term consequences include the continuity of poor oral health and dental disease from childhood to adulthood and the succeeding permanent dentition. Moreover, ECC can lead to impairment in the child's general health, leading to insufficient physical development especially in height and weight (Çolak et al., 2013).

Migrant and minor communities' health is becoming a worldwide public-health issue. According to the International Organization for Migration (IOM) around 192 million people are living outside their place of birth (López-Acuña, 2008). In Malaysia the immigrant forms around 8.3% from the total Malaysian population (International Organization for Migration, 2013). Human migration refers to "The movement of a person or a group of persons, either across an international border, or within a state. It is a population movement, encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification" (International organization for migration, 2014).

It is always said that maintaining migrants' health needs is very challenging (Daher, Ibrahim, Daher, & Anbori, 2011). This might be because a lot of countries would put some restriction to the access to health care for migrants groups (Kullgren, 2003). For instance in Malaysia the government hospitals provide health treatments for

foreigners but with charges that are twice as much as the local rate (Ministry of Health Malaysia, 2013; Rescue.org, 2012). Furthermore, migrants seeking health care face communication obstacles with health professionals (Timmins, 2002).

The aim of this study is to determine the knowledge, attitude and practices and its associated factors of a community on ECC among Arabic school children's mothers in Arabic schools that are registered in the Ministry of Education in Klang Valley.

1.2 Problem Statement

ECC is the most widespread chronic disease in children. The prevalence of ECC has exceeded 70% of preschool children both in Malaysia and some Arabic countries such as Syria and Lebanon (Qadri et al, 2012; Chedid et al., 2011; Oral Health Division, 2009; Oral Health Division, 2007).

The number of Arabic population who are living in Malaysia is increasing every year. Studies show that maintaining migrants' health needs is very challenging (Daher et al., 2011). Multiple countries such as Switzerland, and Taiwan are showing that children with migrant background have higher caries prevalence rate than those without migrant background (Menghini, Steiner, Thomet, & Roos et al., 2008; Lin, Yen, Chang, & Ting et al., 2014). However, the data in Malaysia is limited. The oral health of Arabic young children in Malaysia will have implications on the child, the community the child is living in, as well as the health-care providers.

ECC has a serious short and long term consequences that can affect the child physical and psychological wellbeing. Children with ECC are prone to future caries development (Almeida, Roseman, Sheff, & Huntington et al., 2000) and other serious manifestations such as pain, infection, speech and communication problems, poor nutrition, reduced productivity, poor quality of life, both in childhood and adulthood, and financial expenses (Çolak et al., 2013).

Preschool children cannot control their own oral health. Parents are considered the main caretakers of their offspring. Many children acquire dental diseases and suffer from consequences because of their parents. Parents oral health knowledge, attitudes and practices are directly associated to the oral health of their children (Primosch, 2001).

There are many factors able to influence the KAP of the mothers on oral health of the children such as socio demographic characteristics of mothers (Jain et al., 2014), education programs (Ramazani et al., 2014), dental fears (Akpabio et al., 2008), tooth care (Ru-Shing et al., 2014), and family factors (Chhabra, & Chhabra, 2012). Until today, there is no KAP study on ECC done on the Arabic community who are living in Malaysia.

1.3 Significance of the Study

Parents' awareness is found to play a major role in preventing ECC (Almeida et al., 2000). Mothers' role is critical. Studies show that fathers cannot achieve all of the roles required to provide a complete home environment care for their children compared to mothers (Robert, 2014).

A study of knowledge, attitude and practice on ECC and its associations among Arabic school children's mothers in Arabic schools that are registered in the Ministry of Education in Klang Valley can generate valuable base line information on those three levels and their factors. As a result, findings of this study can be used in future researches or intervention programs targeting Arabic community in Malaysia.

1.4 Research Problem

The research problem is: What are the factors affecting knowledge, attitude and practice of ECC among registered Arabic school children's mothers in Klang Valley?

1.5 Objectives

1.5.1 General Objective

To study the knowledge, attitude and practice on Early Childhood Caries (ECC) and its associated factors of Arabic mothers of preschool and primary school children in Arabic schools that are registered in the Ministry of Education in Klang Valley.

1.5.2 Specific Objectives

1. To determine the socio demographic factors, education programs, dental fears, tooth care, family factors, knowledge, attitude level and level of practice on ECC of the respondents.
2. To identify the source of information on ECC and barriers for good practice on prevention of ECC of the respondents.
3. To determine the association between socio demographic factors and the level of knowledge, attitude and practice on ECC of the respondents.
4. To determine the association between education programs and the level of knowledge, attitude, and practice of the respondents.
5. To determine the association between dental fears and the level of knowledge and attitude on ECC of the respondents.
6. To determine the association between tooth care and the level of knowledge on ECC of the respondents.
7. To determine the association between family factors and the level of practice on ECC of the respondents.
8. To determine the associations between level of knowledge, level of attitude and level of practice on ECC of the respondents.

9. To determine the predictors of good knowledge, positive attitude and good practice on ECC of the respondents.

1.6 Research Hypothesis

1. There is a significant association between socio demographic factors, education programs, dental fears and tooth care with the level of knowledge on ECC of the respondents.
2. There is a significant association between socio demographic factors, education programs and dental fears with the level of attitude towards ECC of the respondents.
3. There is a significant association between socio demographic factors, education programs and family factors with the level of practice on ECC of the respondents.
4. There is a significant association between level of knowledge and the level of attitude on ECC of the respondents.
5. There is a significant association between level of knowledge and the level of attitude with the level of practice on ECC of the respondents.

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