

Psychosocial Determinants of Adherence to Preventive Dental Attendance for Preschool
Children among Filipino Immigrants in Edmonton

by

Parvaneh Badri

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Abstract

Objectives: To explore how immigrant parents in Edmonton's Filipino community experience the phenomenon of adherence to preventive dental attendance (PDA) for their preschool children and what psychosocial factors influence parental adherence to preventive dental attendance for their children.

Methods: We employed a qualitative focused ethnography design in this study, using an interview guide inspired by the Theory of Planned Behaviour. We collected data from six individual and two focus group interviews, recording and transcribing the interviews verbatim, and performing concurrent thematic analysis of the data.

Results: A long-lasting history of socio-economic inequalities in a relatively deprived home-country with several structural barriers shaped Filipino parents' attitude and perceptions about their children's dental needs. As a result, taking children for regular dental visits was a low priority for these parents. However, Filipinos positively embraced new norms regarding oral health of children and the social demand of living in a first-world country and exposure to new knowledge about the importance of PDA after migration to Canada changed their perceptions of care-seeking in favour of adherence to regular dental visits for their young children. Community activities and religious practices and gatherings seemed to have a major role in supporting Filipino newcomers in the host country.

Conclusions: Filipino parents found to be comparably open to Western model of preventive care and acculturation had a key role in promoting regular dental visits for young children. Religious and community centers were the two main sources of social support for Filipinos after migration. Therefore, involving religious and Filipino community organizations in development and implementation of oral health promotion initiatives may improve parents' engagement and uptake of the program.

Preface

This thesis is an original work by Parvaneh Badri. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name “Psychosocial Determinants of Adherence to Preventive Dental Attendance for Preschool Preschool Children among Filipino Immigrants in Edmonton”, No. Pro00045076, 28/02/2014.

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- Dr. Anna Farmer, who without any hesitation generously dedicated her energy, time, and expertise to improving my knowledge towards my thesis development journey

Dedication

*To my great husband, Fariborz,
for his endless love, support and patience during my journey.*

*To my beloved brothers, Badr and Bahador,
for their endless love and inspirations throughout my life.*

*To my dear Farid,
for his endless kindness and encouragement when I needed it.*

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Glossary

In writing the present thesis, I used the first person “WE” instead of “I”, which is expected in reports of qualitative studies to express my deepest respect to all whose collective efforts supported my work. These efforts were garnered through reviews, general input, and valuable experience and expertise kindly provided by my supervisor Dr. Maryam Amin, Dr. Ruth Wolfe and Dr. Anna Farmer in the process of doing my master project.

1. Chapter One: Background

In this chapter, the term ‘early childhood caries’ is defined and its consequences, prevalence etiology, prevention, and adherence to health professionals’ recommendations are presented in detail.

1.1 Early Childhood Caries (ECC)

The term *early childhood caries* (ECC), also known as *baby bottle caries*, *baby bottle tooth decay*, and *nursing caries*, has been criticized by several authors because of its lack of ability to define the age of children affected and to express the nature of rampant characteristics of the disease (Wyne, 1999). Indeed the multifactorial causation of ECC, such as biological (Seow, 1998), psychosocial (Reisine and Douglass, 1998) and behavioural (Reisine and Douglass, 1998) factors, makes it difficult to find a suitable and universally accepted term for the disease that encompasses all of its risk factors, signs, and symptoms. However, the most commonly used definition for ECC is provided by the American Academy of Pediatric Dentistry (AAPD).

1.1.1 Definition

Early childhood caries 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 71 months of age or younger” (American Academy of Pediatric Dentistry et al., 2005, p.15). According to the AAPD (2005), ECC can also be assessed based on the intensity of its signs and symptoms. For instance, for children younger than three years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (S-ECC), whereas, from ages three through five, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥ 4 (age 3), ≥ 5 (age 4), or ≥ 6 (age 5) surfaces constitutes S-ECC.

1.1.2 Consequences

Early childhood caries is recognized as a significant public health problem (American Dental Association, 2000) that is not a self-limited disease, but is progressive with serious consequences (Zafar et al., 2009). The consequences of ECC can compromise the general and oral health of the affected children.

1.1.2.1 General health

Dental health is an important component of general health. For affected children, a simple general health consequence of untreated ECC is pain, which may influence the child's daily activities such as eating (decreased appetite), sleeping, and playing (Zafar et al., 2009). Further consequences of ECC include risk for delayed physical growth such as height and weight, overall development (Acs et al., 1992; Ayhan et al., 1995), functional disorders, and psychosocial dimensions of a child's quality of life (Jackson et al., 2011; Locker and Matear, 2000; Reisine and Douglass, 1998). Children with ECC may also suffer from functional disorders resulting from developmental setbacks involving speech articulation caused by loss of front teeth. Such disorders hinder a child's speech ability development (Low et al., 1998).

Furthermore, ECC may affect a child's learning abilities and school performance (Gift et al., 1992). As a chronic disease, it can lead to repeated missing school days and dental pain that would diminish the learning performance of children (Blumenshine et al., 2008; Gift et al., 1992). Ultimately, premature loss of primary teeth due to ECC may psychologically traumatize young children not only because of the difficulty of the treatment procedure (i.e. extraction), but also due to being taunted by peers, siblings, and extended family members. This may result in poor self-esteem as well as compromised communication and socializing abilities with socializing deficits in adulthood (Low et al., 1999). Frequent emergency visits, hospital admissions, and treatments provided under general anesthesia and sedation are some consequences of ECC that can traumatize affected children and their families (Ferreira et al., 2007; Reisine, 1985; Seow, 1998).

1.1.2.2 Oral health

According to the World Health Organization's (2015) definition, "oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity" (WHO, 2015-Para. 1). Biologically, untreated ECC can lead to the development of pain, infection, and destruction of teeth and the surrounding soft tissue, along with esthetic disturbances, extensive restorative requirements, and possible malocclusion in permanent teeth, all of which can result in functional disorders (Zafar et al., 2009). In addition, evidence has shown that children with a history of ECC are at greater risk of developing additional carious lesions in their primary and permanent dentition (Al-Shalan et al., 1997; Kaste et al., 1999). Hence, the management of severe types of ECC would be extremely costly and complicated in these young children (Kanellis et al., 2000).

1.1.3 Prevalence

Early childhood caries, as an important public health concern, is one of the most common childhood diseases (Naidu et al., 2013). In fact, it is five times more common than asthma and seven times more common than hay fever (Satcher, 2000). A 2010 Canadian Health Measures Survey reported that 57% of Canadian children aged 6 to 11 have had at least one cavity, with an average of 2.5 teeth affected by decay (Rowan-Legg and Committee, 2013), and that caries rates are increasing among children 2 to 4 years of age (Dye et al., 2007). ECC is acknowledged by the United States National Health as the most prevalent chronic unmet health need of children nation-wide (Tinanoff and Reisine, 2009). While caries prevalence and untreated tooth decay rates have decreased slightly in children aged 6-19 years in the United States, an increase in ECC has been observed among children aged 2-5 (Kagihara et al., 2009a). However, ECC is not equally distributed among the population.

1.1.3.1 General population

Current world-wide epidemiological data collected through an international organization indicate an alarming increase in the prevalence of dental caries among children (Bagramian et

al., 2009). The third American National Health and Nutrition Examination Survey (1999-2002) indicated that 41% of children aged 2 to 11 years had dental caries in their primary teeth and 42% of those aged 6 to 19 years had caries in their permanent teeth (Beltrán-Aguilar et al., 2005). The prevalence of ECC has been reported to range from 6-90%, with most developed countries in the lower end and most developing countries in the middle to higher end of this range (Naidu et al., 2013). The National Oral Health Survey in the Philippines (a developing country) reported a rate of 97.1% caries prevalence in 6-year-olds, 84.7% of whom presented with symptoms of dental infection in the Philippines (Bagramian et al., 2009).

1.1.3.2 Immigrant population

Canadian children continue to have a high rate of dental disease, and this burden of illness is disproportionately represented among children of lower socioeconomic status, those in Aboriginal communities, and new immigrants (Rowan-Legg and Committee, 2013). In fact, 80% of the disease is found in 20% of the children, mostly from disadvantaged populations that include recent immigrants (Miller et al., 2010a; Pitts et al., 2004). The existence of disparities in the prevalence and treatment of dental caries in children is an emerging public health issue (Bagramian et al., 2009). An important reality is the social impact of differences in dental caries on specific groups of individuals around the world. A higher prevalence of caries occurs in lower socioeconomic groups, new immigrants and children (Bagramian et al., 2009). Several studies have confirmed the disparities between new Canadian children and their Canadian-born peers, both in terms of oral health status and the use of dental services (Abramson and Heimann, 1997). Many immigrant children come from countries without dental care. Upon arrival in Canada, immigrants encounter language and cultural barriers, are unfamiliar with the health care system, and lack financial resources, all of which can impede their access to appropriate dental care (Locker et al., 1998).

1.1.4 Etiology

Dental caries is recognized as a multifactorial disease whose onset is caused by microbiological shifts within the complex biofilm, affected by salivary flow and composition,

exposure to fluoride, consumption of dietary sugars, and oral health preventive behaviours (Zafar et al., 2009).

1.1.4.1 Biological determinants

Caries develops as a result of the interaction of cariogenic microorganisms, fermentable carbohydrates, and susceptible tooth surface. Over time, these factors produce incipient carious lesions (Lee et al., 1993). The main cariogenic microorganisms involved in developing early childhood caries are streptococci (mutans streptococci [MS], sobrinus) and lactobacillus. These pathogens, in combination with fermentable carbohydrates, initiate the metabolism process through the production of acidic end products, which contribute to the demineralization of tooth enamel in dental caries (Zafar et al., 2009).

1.1.4.2 Non-biological determinants

1.1.4.2.1. Social Factors

Socioeconomic status, psychosocial indicators, and being an ethnic minority have been identified as social factors associated with the prevalence of ECC (Tinanoff and Reisine, 2009).

Socioeconomic status as a contributing factor: There is significant evidence indicating a correlation between the socioeconomic status of families and the prevalence of ECC. Young children born into low-income families are at higher risk for developing dental caries compared with children from higher income families (Vargas et al., 1998). Despite the difference in prevalence of dental caries with fewer dental caries in children in well-off families, the severity of the disease is the same in both types of families (Tinanoff et al., 2002). As well, children in single-parent families and those with low-level educated or illiterate parents are more likely to develop ECC (Maciel et al., 2001). Children in low-income families whose mother had a full-time job were shown to have higher ECC prevalence compared with children whose mother had a part-time job (Tsai et al., 2006). Tsai et al. have shown that mothers with full time jobs face difficulties in managing time for taking care of their children's oral health. Although there is strong evidence in favor of the importance of socioeconomic status in development of ECC, the

underlying mechanisms that account for these disparities are not completely clear (Tinanoff and Reisine, 2009).

Psychosocial indicators as contributing factors: Similar to socioeconomic status, the mechanisms of psychosocial indicators involved in the development of dental disease, such as parenting stress, social support, caregiver-perceived self-efficacy, and neighborhood issues, are not well-understood (Tinanoff and Reisine, 2009). While the association between stress and chronic illness is well-documented in the medical literature, studies of the relationship between stress and dental caries have shown varying and unsound results (Finlayson et al., 2007). Furthermore, despite the considerable attention given to the positive contribution of social support in the general health literature, this factor has received less attention in the oral health literature, and relatively little in studies of ECC (Kiser, 2001). Self-efficacy has been found to be strongly associated with an individual's decision to be involved in a broad range of health behaviours (Finlayson et al., 2007). An investigation conducted among low-income African American caregivers in Detroit revealed strong caregivers' beliefs in their ability to brush their children's teeth. Nevertheless, about 80% of these caregivers also believed that most children would develop dental cavities (Finlayson et al., 2007).

Sociocultural determinants as contributing factors: Ethnic minorities and new immigrants face diverse oral health disparities. A review of health disparities literature reveals significant cultural differences in how health care providers communicate with ethnic minority patients, levels of patient trust, how patients think about the etiology, course, outcomes of disease, and access to social resources (Saha et al., 2008). Furthermore, data collected from focus groups of African American, Chinese, Latino, and Filipino caregivers around cultural beliefs and children's oral health care revealed widely varying perceptions concerning the cause of disease, fear of dental care, and knowledge about oral health care; these beliefs, in turn, influenced their use of dental services (Harrison, 2003). Facing the above socio-cultural differences in a new country could contribute to related psychosocial factors, influencing access to health care services. More attention to professionals' cultural competency is thus needed to improve communication skills and address the limitations in oral health literacy among people with diverse cultural backgrounds who are at the greatest risk of poor oral health (Garcia et al., 2008). Oral health literacy has been defined as "the degree to which individuals have the

capacity to obtain, process and understand basic health information and services needed to make appropriate oral health decisions” (Horowitz and Kleinman, 2008, p.862). We need to consider cultural competency more than just acquiring facts about certain ethnic groups – rather, “given the multitude of cultures and diversity of individuals within a culture, we must fall back on basic principles: self-awareness, respect for diversity, and sensitivity in communication” (Mouradian and Corbin, 2003).

1.1.4.2.2 Behavioural Factors

Oral hygiene: Dental plaque is a high-risk factor for developing caries in young children (Karjalainen et al., 2001). A child's brushing habits, frequency of brushing, and/or use of fluoridated toothpaste are associated with the occurrence and development of dental caries (Vanobbergen et al., 2001), whereas parental oral health behaviour plays a key role in maintaining and improving children's oral hygiene. Studies have identified that very young children who did not clean their teeth at bedtime as a result of a lack of parental involvement in tooth brushing habits had a higher risk of developing ECC (Harris et al., 2004).

Inadequate diet and feeding: The consumption of dietary sugars, fruit juices and carbonated beverages, along with bottle-feeding (especially at bedtime) are considered cariogenic behaviours and have been implicated in children with ECC (Zafar et al., 2009). On the other hand, despite the many known advantages of breastfeeding and the World Health Organization's (WHO) recommendation that children be breastfed for 24 months, there is conflicting evidence regarding breastfeeding in terms of its association with ECC (Bowen and Lawrence, 2005). Evidence from case reports suggests that protracted breastfeeding and allowing an infant to sleep for many hours while feeding lead to increasing the risk of caries in some infants (Bowen and Lawrence, 2005).

Regular dental attendance: Regular dental visits allow for the detection and management of oral diseases at early stages and the education of parents on how to prevent the disease. Attendees also benefit from evidence-based technological advances (Lewis et al., 2007b; Patrick et al., 2006a). Regular dental attendance thus has a significant influence on other preventive measures related to oral hygiene and diet through children's and parents' education.

1.1.5 Prevention

In its early stages, early childhood caries is a preventable disease. The physical, psychological, and economic consequences of ECC can largely be avoided through adequate oral health behavior changes, mediated by different strategies such as, enhancing parents knowledge toward optimum oral hygiene and dietary practices, using agents such as fluoride and non-cariogenic sweeteners, and adhering to regular dental visits are (Kowash et al., 2000).

1.1.5.1 Oral hygiene

Although the role of tooth brushing in the prevention of tooth decay has been considered self-evident for long time, there is little evidence to support the notion that tooth brushing per se reduces caries (Karjalainen et al., 2001). However, there is strong evidence in favor of decay-preventing benefit of tooth brushing with fluoride-containing toothpaste (Burt and Eklund, 2005). Clinical trial studies have shown that daily tooth brushing with fluoride toothpaste significantly reduces caries incidence in 3 to 6 year-olds (Schwarz et al., 1998). The recommended practice for optimum prevention of early childhood caries is twice-daily brushing with fluoride-containing toothpaste (Sjögren and Birkhed, 1993).

1.1.5.2 Dietary practices

The American Academy of Pediatrics (AAP) recommends the consumption of no more than four to six ounces of fruit juice per day from a cup (i.e., not from a bottle or sippy cup) and as part of a meal or snack for children 1 to 6 years of age (Weber-Gasparoni et al., 2013). In addition, parents and caregivers should avoid allowing infants to sleep with a bottle filled with milk or liquids containing sugars, and *ad libitum* breast-feeding should be avoided after the eruption of the first primary tooth and the introduction of dietary substances containing carbohydrates (Pediatrics, 2008). Nutritional counseling, like that offered by the AAP and professional health care workers, is considered a valuable practice for reducing caries prevalence in children by enhancing parental awareness about the importance of reducing the frequency of sugar exposure in their children (Tinanoff and Reisine, 2009).

1.1.5.3 Regular dental attendance

Evidence increasingly indicates that preventive interventions within the first year of life are critical (Lee et al., 2006) for the prevention of ECC. The AAPD recommends that children have dental examinations every 6 months, starting at the eruption of the first tooth but no later than the first birthday (American Academy of Pediatric Dentistry, 2009). This may be best implemented with the help of medical providers who are trained to counsel caregivers and refer infants and toddlers to dental care professionals (Douglass et al., 2009). Literature comparing the use of dental services by foreign-born and native-born population in Canada has illustrated that Canadian immigrants used fewer dental services compare with native-born Canadians (Newbold and Patel, 2006). Furthermore, foreign-born immigrants with greater need to dental services were more likely to visit dentists for treatment, whereas Canadian-born group with better oral health status were more likely to report preventive dental checkup visits (Newbold and Patel, 2006).

1.1.6 Adherence to health professional recommendations

Adherence has been defined as “the extent to which a patient’s behaviour (taking medication, following a diet, modifying habits, or attending clinics) coincides with medical or health advice” (Haynes, 2001). Non-adherence is a multifactorial issue that is associated with behavioural and system barriers. Behavioural barriers include social norms and patterns, cognition, and personal beliefs, while system barriers include treatment complexity, medications/dosing schedule, multiple providers and cost (Balkrishnan, 1998).

1.1.6.1 General health

The adherence of patients to professional medical recommendations is a problem that has been studied for several decades (Walker et al., 2006). Medication adherence studies indicate that between 20 to 60% of patients fail to follow prescriptions (Donnan et al., 2002; Osterberg and Blaschke, 2005). Since, unlike effective therapeutic medications, preventive medications do not provide the positive reinforcement of symptom control or relief, adherence may be even more of a challenge, especially in primary asymptomatic prevention. Previous studies have reported patient characteristics such as age, sex, ethnicity, socioeconomic status, level of social

support, anxiety or depression and history of adherence to medications as moderators or predictors of medication adherence (DiMatteo, 2004; Walker et al., 2006). The complexity of the therapeutic regimen and the characteristics of health care systems and providers are also important variables in understanding medication adherence. Infant vaccinations (Jacobson et al., 2001) and exercise for people at high risk of cardiovascular disease (Carlson et al., 2000) are examples of professional recommendations to prevent disease and promote general health. Behaviour change theories, such as social cognition theories could be used to guide the development of health promotion interventions by spelling out concepts that could be translated into strategies for changing health behaviours (Glanz et al., 2008).

1.1.6.2 Oral health

ECC preventive measures should be started very early, working on attitude and awareness of pregnant mothers regarding preventive oral hygiene and feeding practices (Low et al., 1998). For the next step, the American Academy of Pediatric Dentistry (AAPD) advocates the initiative of a “dental home” for all new-born and young children 0 to 6 years (AAPD, 2009). A “dental home” is defined as an interaction between patients, parents and their dental professionals. This means that a child’s oral health care is delivered in a comprehensive, continuously accessible, and family-centered way, coordinated by a dental practitioner in every recall appointment (Ashkenazi et al., 2012). Adherence to adequate diet and feeding practices, such as using unsweetened beverages and avoiding feeding practice during the sleep time of children; adherence to oral hygiene, such as cleaning the gums and teeth after feeding; and supervised regular use of fluoride mouth rinse, are examples of professional recommendations for preventive oral health measures (Harris et al., 2004). Although most studies on children’s dental attendance do not differentiate between preventive and restorative dental visits, adherence to regular dental examinations is disappointing. Nearly half of children under the age 6 years in the United States do not attend dental visits in accordance with the AAPD recommendations, and those younger than 6 years are the least likely to attend (Stella et al., 2002). Without adherence, which is defined as the extent to which a patient’s behaviour follows health advice (Myers and Midence, 1998), even the most sophisticated and costly preventive or treatment initiatives fail (West et al., 1993). Parents’ adherence to professionally recommended preventive dental

measures, including regular dental attendance, plays a key role in maintaining and improving their children's oral health (Tedesco et al., 1991)

1.2 Summary

Early Childhood Caries (ECC), a multifactorial chronic disease, is a significant public health problem with several oral and general health consequences. ECC is five times more common than asthma and seven times more common than hay fever. Its prevalence has been reported to range from 6 to 90%, with most developed countries in the lower end and most developing countries in the middle to higher end of this range. In Canada, 57% of children aged 6 to 11 have had at least one cavity, with an average of 2.5 teeth affected by decay. However, a higher prevalence of caries occurs in lower socioeconomic groups, new immigrants, and children. ECC is a preventable disease with biological, social, and behavioural determinants, and can be largely prevented through adequate adherence to oral hygiene, proper diet and feeding practices, and regular preventive dental visits. However, a good understanding of the biological risk factors of ECC, while necessary, is not enough to address the problem of ECC without exploring factors affecting parental adherence to recommended preventive measures, including children's dental attendance. Parents' adherence to dental advice, including regular dental attendance and scheduled appointments, plays a key role in improving and maintaining children's oral health. The American Academy of Pediatric Dentistry (AAPD) recommends that children have dental examinations every 6 months, starting at the eruption of the first tooth but no later than the first birthday. A higher adherence to preventive regular attendance and lower prevalence of dental caries among Canadian-born children compared to lower adherence and higher prevalence of dental caries of foreign-born immigrant counterparts in Canada suggests that adherence to preventive dental attendance is effective in reducing dental caries. In the following chapter, factors that influence parental adherence to regular dental attendance for their children will be explored.

2. Chapter Two: Factors affecting children's adherence to regular dental attendance: A systematic review

Published Article:

Badri, P, Saltaji, H, Flores-Mir, C, Amin, M. Factors Influencing Children's Adherence to Regular Dental Attendance: A Systematic Review. JADA 2014; 145(8):817- 828.

2.1 Abstract

Background: Parents' adherence to regular dental attendance for their young children plays an important role in improving and maintaining children's oral health. The authors conducted a systematic review to determine the factors that influence parental adherence to regular dental attendance for their children to synthesize our research based on its results.

Type of Studies Reviewed: The authors searched nine electronic databases to May 2013. They included quantitative and qualitative studies in which researchers examined factors influencing dental attendance in children 12 years or younger. The authors considered all emergency and nonemergency visits to dentists. They appraised methodological quality through the Health Evidence Bulletins Wales methodological quality assessment tool.

Results: The authors selected 14 studies for the systematic review. Researchers in these studies reported a variety of factors at the patient, provider and system levels that influenced dental attendance. Factors identified at the patient level included parents' education, socioeconomic status, behavioural beliefs, perceived power and subjective norms. At the provider level, the authors identified communication and professional skills. At the system level, the authors identified collaborations between communities and health care professionals, as well as a formal policy of referring patients from family physicians and pediatricians to dentists.

Practical Implications: Barriers to and facilitators of parents' adherence to regular dental attendance for their children should be identified and considered when formulating oral health promotion policies. Further research is needed to investigate psychosocial determinants of children's adherence to regular dental visits.

2.2 Introduction

The prevalence of early childhood caries (ECC) is five times higher than that of asthma (Miller et al., 2010b), making it the most common chronic childhood disease (Casamassimo et al., 2009). ECC is a serious public health problem that is largely preventable (Kagihara et al., 2009b; Vargas and Ronzio, 2006) through adequate adherence to oral hygiene, proper diet and feeding practices, and regular preventive dental visits (Feldens et al., 2007; Monroy, 2007). Poor oral health has a significant impact on children's growth and development, overall well-being and quality of life (Peterson-Sweeney and Stevens, 2010).

According to the American Academy of Pediatric Dentistry (AAPD), children should have their first dental visit within six months of the first tooth's eruption and no later than their first birthday (Committee and Affairs, 2008). The AAPD guideline also states that the "most common interval of examination is six months. . . ." (Committee and Affairs, 2008). The regular use of professional dental services, especially preventive services, has been associated with better oral health (Donaldson et al., 2008), because regular dental visits permit early detection and better treatment of oral diseases, as well as raise parental awareness of the causes and prevention of oral disease (Lewis et al., 2007a; Patrick et al., 2006b). Non-adherence to dentists' advice has been recognized as a significant problem. Kühner and Raetzke (1989) reported that a low percentage of patients followed recommended preventive periodontal regimens (Kuhner and Raetzke, 1989). Regular dental attendance might have a significant influence on the uptake of preventive measures related to oral hygiene and diet by increasing parental education and awareness of oral disease and its prevention.

To date, adherence studies have focused primarily on medical regimens and treatment (Jay and DuRant, 1992; West et al., 1993), whereas adherence to dental regimens and preventive practices has received little attention. Despite the importance of preventive dental measures in

children, researchers in few studies have evaluated pediatric patients' adherence to these measures (Ashkenazi et al., 2007; Gross et al., 1988). These researchers also paid more attention to preventive measures concerning oral hygiene rather than regular dental attendance. Moreover, the existing literature on adherence to dental visits is mainly empirical. Van Dulmen and colleagues (2007) conducted a systematic review, the results of which showed that a poor definition of adherence or the lack of a theoretical framework resulted in failed attempts to improve adherence to medical treatment in the short term (van Dulmen et al., 2007). Thus, innovations in oral health theory and practice are needed urgently, especially those that target young children, because their adherence depends on caregivers' willingness to comply with the indicated regimen (Osterberg and Blaschke, 2005).

For these reasons, it is important to understand fully the factors that facilitate or impede children's adherence to regular dental attendance. Therefore, the purpose of this review was to systematically identify and analyze the facilitators of and barriers to children's adherence to regular dental attendance.

2.3 Methods

We reported this systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement for reporting systematic reviews of health sciences (Liberati et al., 2009).

2.3.1 Eligibility Collection process

For this review, we considered studies meeting the following predefined eligibility criteria. Studies should have included examination of the barriers to and facilitators of dental attendance in emergency or nonemergency situations (that is, treatment visits, preventive care visits) among children 12 years or younger, with no restrictions on sex or language. We chose this age group because the highest prevalence of caries with the lowest rate of dental attendance was found in this group (Bagramian et al., 2009; Kagihara et al., 2009b). Moreover, regular dental attendance by children in this age group depends on the willingness of parents and caregivers (Ashkenazi et al., 2007). With respect to study design, we included quantitative,

qualitative and mixed-methods studies. We excluded studies in which investigators reported on dental attendance of children older than 12 years, unless they reported data separately for different age groups (Amin, 2011).

2.3.2 Data Sources and Searches

We conducted comprehensive searches up to May 31, 2013, by using the following electronic bibliographic databases: PubMed (1946 to March 29, 2013), Embase (1974 to 2013, week 12), Cochrane Database of Systematic Reviews (2005 to first quarter 2013), Database of Abstracts of Reviews of Effects (first quarter 2013), Cochrane Central Register of Controlled Trials (first quarter 2013), PASCAL (1984 to 2013, week 13), CINAHL (1937 to March 2013) and Scopus (1973 to March 2013).

We developed the search strategy with the help of a specialized health sciences librarian at the John W. Scott Health Sciences Library, University of Alberta, Edmonton, Canada. We established search terms in PubMed and then adjusted them as required for each electronic database. The search terms included the following: “dental attendance,” “dental visit,” “adherence,” “compliance,” “barriers,” “facilitators” and “obstacles.” For a more detailed account, see eTable 2.1 (available as supplemental data to the online version of this article [found at <http://jada.ada.org/content/145/8/817/suppl/DC1>]). In addition, we screened by hand the reference lists of the selected articles for any articles that might have been omitted. We did not apply any restrictions regarding publication year or language.

2.3.3 Study Selection

Two authors (P.B. and H.S.) independently reviewed the list of titles and abstracts for inclusion. They then retrieved the full articles for the final selection process. If an abstract was judged to contain insufficient information to make a decision about inclusion, the two authors reviewed the full article. They then applied the same selection criteria to the complete articles that had been applied in the initial selection phase. The reviewers discussed any discrepancies in decisions until they reached a consensus.

2.3.4 Data Collection Process

The same investigators (P.B. and H.S.) performed data extraction and resolved any discrepancies via discussion until consensus was reached. If the reviewers deemed any article to be unclear after a full evaluation, they contacted the authors of the study for clarification.

2.3.5 Data Items

The two investigators extracted data from each of the selected studies on the basis of study design, participants' ages, sample size, recruitment method, and barriers to and facilitators of dental attendance. Quantitative studies involved the use of data from closed-ended questions, with researchers using numerical and statistical tools to appraise facilitators of adherence to regular dental attendance among children. In contrast, investigators in qualitative studies used open-ended interviews or focus groups to elicit information regarding both barriers to and facilitators of adherence to regular dental visits.

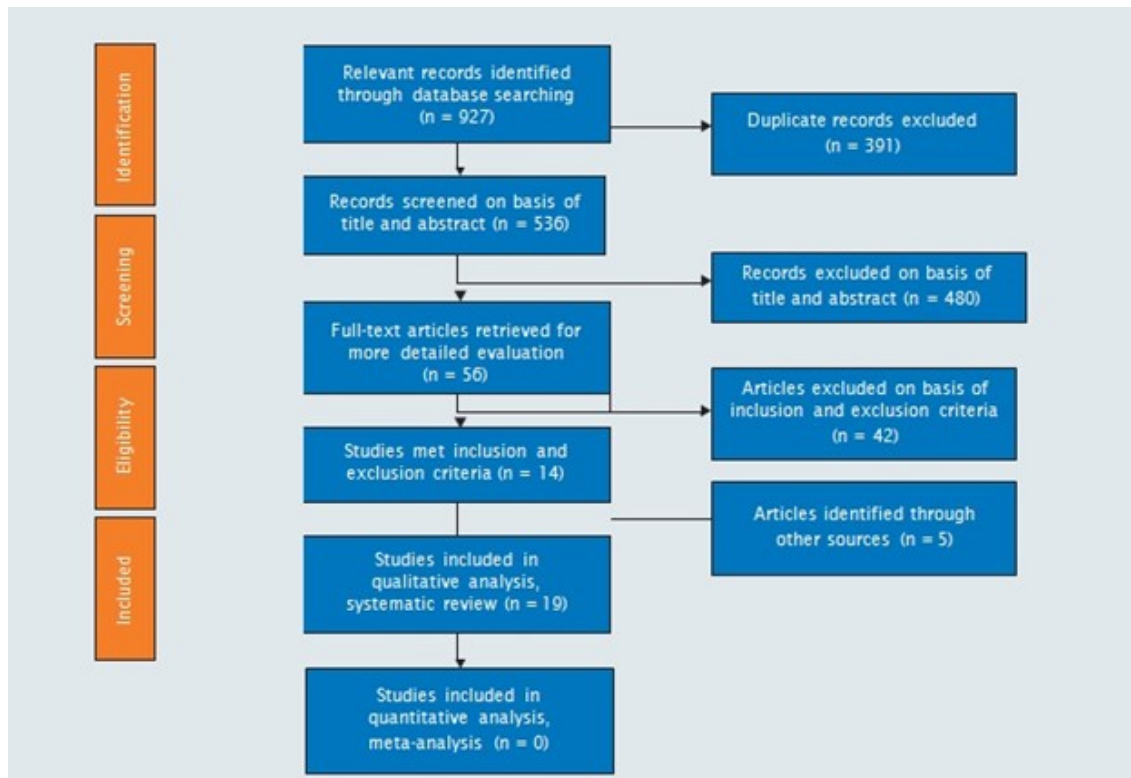


Figure 2-1: Flow diagram of the literature search, according to the preferred reporting items for Systematic Reviews and Meta-Analysis (PRISMA) (Liberati et al., 2009)

2.3.6 Risk of Bias in Individual Studies

The reviewers (P.B. and H.S.) assessed the methodological quality of selected studies, and they resolved discrepancies via discussion until reaching a consensus. They used the Health Evidence Bulletins Wales methodological quality assessment tool to appraise the quality of the selected studies (Weightman et al., 2005). We included the following methodological quality items in our assessment: methods of participant selection, sample size calculation, assessment methods, efforts to address potential sources of bias and description of statistical methods (including those used to control for confounding data).

2.3.7 Summary Measures and Synthesis of Results

The study included factors—classified as barriers or facilitators—that affected adherence to regular dental attendance. The final outcome was a list of identified determinants. Whenever

possible, we analyzed each item according to the methodological strength of the study from which it was retrieved. Owing to the nature of the outcome, a meta-analysis was not possible. Our intent was to conduct only a qualitative synthesis.

2.4 Results

2.4.1 Study Selection

The search strategy resulted in identification of 927 studies, including 391 duplicates. After eliminating the duplicates, the reviewers excluded an additional 480 studies on the basis of title and abstract screening; this resulted in 56 complete texts for further evaluation. After the reviewers applied the inclusion and exclusion criteria, only 14 studies remained. An additional five reports were found by hand searching the references of these 14 studies, for a total of 19 studies that fulfilled the inclusion and exclusion criteria (Figure 2.1). (Of the 61 full-text studies identified, 11 were excluded because the population was inappropriate [based on our inclusion criteria], 27 were excluded because of the population's age, three were excluded because they were reviews of other studies or guidelines, and one was excluded because of an inadequate objective.) eTable 2.2 (available as supplemental data to the online version of this article [found at <http://jada.ada.org/content/145/8/817/suppl/DC1>]) presents a summary of the excluded studies and the reasons for their exclusion.

2.4.2 Study Characteristics

Of the 14 studies identified through the electronic databases, 12 were quantitative studies and two were qualitative studies. Four of the quantitative studies were conducted in North America (Brickhouse et al., 2009; Quinonez et al., 2008; Reiss et al., 1976; Talekar et al., 2005), five in Europe (Leroy et al., 2013; Liena and Ausina, 1997; Rodd et al., 2007; Wang and Aspelund, 2009; Yuan et al., 2007), one in Africa (Denloye et al., 2004), one in Asia (Razak and Jaafar, 1987) and one in South America (Goettems et al., 2012). The study by Liena Puy and Ausina Mårquez (Liena and Ausina, 1997) was published in Spanish and translated into English by a Spanish-speaking researcher for this review. Of the two qualitative studies, one was conducted in North America (Hoeft et al., 2011) the other in Europe (Vanobbergen, 2005). The reviewers found five additional studies by means of hand searching. These included a mixed-

methods study (Eckersley and Blinkhorn, 2001) from England, two quantitative studies (one (Amin, 2011) from North America and one (Vignarajah, 1997) from the Caribbean) and two qualitative studies (one (Kelly et al., 2005) conducted in North America and one (Naidu et al., 2012) conducted in the West Indies). Table 2.1 presents a summary of the data extracted from the included studies. (An expanded version of Table 2.1 is presented as eTable 2.3, available as supplemental data to the online version of this article [found at <http://jada.ada.org/content/145/8/817/suppl/DC1>].)

Although only four of the 19 studies (two quantitative and two qualitative) mentioned the word “barriers” in their titles, barriers to dental attendance were reported in the content and outcome of all but four (three quantitative studies (Goettems et al., 2012; Razak and Jaafar, 1987; Reiss et al., 1976) and one mixed-methods study (Eckersley and Blinkhorn, 2001)) of the remaining 15 studies. In the four studies in which investigators did not report barriers, factors with a positive influence (that is, facilitators) were identified instead. We found the factors influencing children’s adherence to regular dental attendance to be diverse among the studies.

To better describe the identified factors in this review, we grouped them into three main categories, according to the classification by Scheppers and colleagues (Scheppers et al., 2006): patient level, provider level and system level. We used the theory of planned behaviour (TPB) to present factors at the patient level in addition to socio-demographic characteristics of participants.

The role of TPB is to link behavioural, normative and perceived control beliefs to behaviour via behavioural intention (Ajzen, 1991). The efficacy of TPB in predicting health-related behaviours is well supported by empirical evidence (Ajzen, 1991; Armitage and Conner, 2001b; Van den Branden et al., 2013a). According to Ajzen (1991, P.190), “intentions to perform behaviours of different kinds can be predicted with high accuracy from attitudes toward the behaviour, subjective norms, and perceived behavioural control; and these intentions, together with perceptions of behavioural control, account for considerable variance in actual behaviour” (Ajzen, 1991). The results of a study by Van den Branden and colleagues (2013) show the applicability of TPB in predicting parental behaviours regarding oral health, including parental adherence to regular dental attendance (Van den Branden et al., 2013a).

2.4.3 Patient-level factors

Family socio-demographic characteristics: Dental attendance by very young children depends mostly on parents or caregivers' willingness to adhere to dental visits for their children.

Table 2-1: Description of quantitative, qualitative and mixed-methods

SOURCE (COUNTRY OF STUDY)	STUDY DESIGN	PARTICIPANTS (SAMPLE SIZE)	CHILDREN'S AGE	PARTICIPATION METHOD	STATISTICAL/ ANALYTIC METHOD
Quantitative Studies					
Amin, 2011 (Canada)	Cross-sectional survey	Clients of Alberta Child Health Benefit (N = 405); clients of Alberta Adult Health Benefit (N = 405)	9 Years	Telephone interviews	Descriptive
Brickhouse and Colleagues, 2009 (United States)	Cross-sectional questionnaire	Caregivers (N = 55)	3-12 Years	Mailed questionnaires	Multivariate regression
Denloye and Colleagues, 2004 (Nigeria)	Cross-sectional and 3 years (2001-2003)	Children (N = 875)	7 Years	Visits to pediatric clinic of preventive dentistry area, University College Hospital, Ibadan (Nigeria)	Descriptive
Goettems and Colleagues, 2012 (Brazil)	prospective collection Cross-sectional questionnaires and dental examination	Mother-child dyads (N = 608)	2-5 Years	Children's National Immunization Campaign	Bivariate and multivariate analysis
Leroy and Colleagues, 2013 (Belgium)	Cross-sectional and prospective study; validated questionnaires and	Parent-child dyads (N = 1,057)	3 and 5 Years; children recruited at birth (2003-2004) and examined in 2007-2009	Recruited shortly after birth	Logistic regression and multiple imputation analyses
Liena Puy and Ausina Márquez, 1997 (Spain)	Cross-sectional study; descriptive longitudinal study	Children (N = 957)	Mean age, 11 years	Attending one of preventive odontology unit	Descriptive
Quiñonez and Colleagues, 2008 (United States)	Cross-sectional questionnaire and longitudinal study; medical encounter with child (medical provider completed dental	Parent-child dyads (N = 744)	12-24 Months	Parents of Medicaid-enrolled children	Descriptive and univariate/bivariate/multivariate analysis
Razak and Jaafar, 1987 (Malaysia)	Cross-sectional study; randomly selected	Children (N = 166)	2-12 Years	Treatment for first time	Descriptive
Reiss and Colleagues, 1976 (United States)	Random allocation experimental study and clinical screening	Parents and children (N = 180)/33 families	6-12 Years	Notices mailed to home address,	Binomial (nonparametric) test
Rodd and Colleagues, 2007 (England)	Prospective study of failed appointments over 12 months	45 children with cleft lip/palate, 45 age-, sex- and postal code-matched children	2-15 Years; mean age, 8.8 years	Computerized hospital appointment database/12-month period/three specialist	Independent-sample <i>t</i> test/stepwise multiple regression
* Source: U.S. Department of Health and Human Services. (Statistics, 1994)					

Investigators in two studies reported that in families with multiple children, younger children were more likely than older children to have visited a dentist (Leroy et al., 2013; Liena and Ausina, 1997; Quinonez et al., 2008; Reiss et al., 1976; Talekar et al., 2005). Although dental visits for preschool-aged children depend exclusively on parental decisions, the oral health of school-aged children also is under the influence of schools through requests for dental checkups and school examination schedules (Naidu et al., 2012).

Table 2.1 (CONTINUED)					
SOURCE (COUNTRY OF STUDY)	STUDY DESIGN	PARTICIPANTS (SAMPLE SIZE)	CHILDREN'S AGE	PARTICIPATION METHOD	STATISTICAL/ ANALYTIC METHOD
Quantitative Studies (Continued)					
Talekar and Colleagues,²⁷ 2005	Cross-sectional study using national survey	Caregivers and children (N = 3,424)	2-5 Years	Third National Health and Nutrition	Preliminary descriptive
Vignarajah,³⁹ 1997 (Caribbean island of	Cross-sectional questionnaire/pilot	Schoolchildren (N = 350)	12 Years	In class/randomly selected primary	Descriptive
Wang and Aspelund,³¹ 2009 (Norway)	Children recalled for routine examination; historical data and data about failed	Children (N = 576)	3-18 Years; mean age, 10 Years	Regular recall visit, free-of-charge dental services	Multiple logistic regression
Yuan and Colleagues,³² 2007 (Northern Ireland)	Quasi-experimental, nonequivalent, two-group comparison	Mothers and newborns (N = unknown) (report gives mean percentage of samples); children	0-2 and 3-5 Years	Community-based home visits	t test method
Qualitative Studies					
Hoelt and Colleagues,³⁶ 2011 (United States)	Interview approach	Mothers (N = 48)	10 Years or younger; mean age, 5 years	Multiple sources: immigrants' parents, low-income clinics, snowball referral	Standard qualitative analytic procedures
Kelly and Colleagues,⁴⁰ 2005	Focus group approach	Caregivers and children (N = 76)	4-12 Years	Caregivers of Medicaid-enrolled children	Standard qualitative analytic procedures
Naidu and Colleagues,⁴¹ 2012 (West Indies)	Focus group approach	Parents and caregivers (N = 18)	Preschool-aged	Letters sent to three preschools from a list used for previous epidemiologic study in	Thematic content analysis method
Vanobbergen and Colleagues,³⁷ 2007 (Belgium)	Focus group approach	Mothers and children (N = 150)	10-12 Years	Participants recruited in social services, neighborhood groups, mothers' groups in	Content analysis method
Mixed-Methods Study					
Eckersley and Blinkhorn,³⁸ 2011 (England)	Interviews, structured questionnaires, qualitative and quantitative methods included; Jarman scores	Mothers (N = 284)	3 Years	Play groups and nurseries used to contact parents in city	Standard qualitative analytic procedures, r ² tests

However, with the exception of two studies' findings, the child's sex had no significant effect on adherence to regular dental visits. Researchers in one study reported that girls had significantly more symptomatic and asymptomatic dental visits than did boys (Denloye et al., 2004), and those in another study found that girls with clefts tended to miss more appointments than did boys (Rodd et al., 2007). Furthermore, several researchers reported a significant correlation between children's adherence to regular dental attendance and parents' level of education (Brickhouse et al., 2009; Goettems et al., 2012; Kelly et al., 2005; Leroy et al., 2013), economic status (Amin, 2011; Denloye et al., 2004; Goettems et al., 2012; Hoeft et al., 2011; Naidu et al., 2012) and marital status (Quinonez et al., 2008). We found only one study in which researchers did not report an association between parents' education and their children's dental attendance (Hoeft et al., 2011)

Table 2-2: Critical appraisal of quantitative studies.*

QUESTIONS PERTAINING TO METHODOLOGICAL QUALITY	REVIEWERS' ASSESSMENT, ACCORDING TO STUDY						
	Amin, ²² 2011	Brickhouse and Colleagues, 2009	Denloye and Colleagues, 2004	Eckersley and Blinkhorn, 2001 [†]	Goettems and Colleagues, 2012	Leroy and Colleagues, 2013	Liena Puy and Ausina Márquez,
Is Study Relevant to Project Needs?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does Report Address a Clearly Focused Issue?	Yes	Yes	Yes	Yes	Yes	Yes	Can't tell
Is Choice of Study Method Appropriate?	Can't tell	Yes	Yes	Can't tell	Yes	Yes	Can't tell
Is Population Appropriate?	Yes	NA [‡]	Yes	Yes	Yes	Yes	Yes
Was Confounding and Bias Considered?	No	Yes	Can't tell	Yes	Yes	Yes	No
Cohort Study: Was Follow-up Long Enough?	NA	NA	NA	NA	NA	NA	NA
Are Tables/Graphs Labeled Adequately and	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Are You Confident About Authors' Choice and Use of	NA	Yes	Can't tell	No	Yes	Yes	No
What Are the Results of This Piece of Research?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Can Results Be Applied to Local Situation?	Yes	Can't tell	Yes	Yes	Yes	Can't tell	Can't tell
Were All Important	an't tell	Yes	Yes	Yes	Yes	Yes	Yes
Is Any Cost Information Provided?	o	No	No	No	No	No	No
Accept for Further Use as Type IV	A	NA	NA	NA	NA	NA	NA

* Source: Weightman and colleagues.²³

† Mixed-methods study.

). Researchers also reported that dental visits, especially preventive visits, occurred less frequently among families with a lower income status (Amin, 2011; Denloye et al., 2004; Goettems et al., 2012; Hoeft et al., 2011; Naidu et al., 2012) and among those headed by single parents (Quinonez et al., 2008).

Parents’ perceptions and attitudes: Parents’ lack of knowledge regarding the oral health of their children, the importance of primary teeth, the timing of the first dental visit and the frequency of dental visits, as well as the perceived lower priority of dental health compared with general health and the perceived lack of need for regular dental visits for a healthy child have been shown to directly influence parents’ intentions to adhere to dental visits for their children (Amin, 2011; Denloye et al., 2004; Goettems et al., 2012; Hoeft et al., 2011; Naidu et al., 2012).

Table 2.2 (CONTINUED)

REVIEWERS’ ASSESSMENT, ACCORDING TO STUDY							
Quiñonez and Colleagues, 2008	Razak and Jaafar, 1987	Reiss and Colleagues, 1976	Rodd and Colleagues, 2007	Talekar and Colleagues, 2005	Vignarajah, 1997	Wang and Aspelund, 2009	Yuan and Colleagues, 2007
No	Can’t tell	Yes	Yes	Yes	Yes	Yes	Yes
Can’t tell	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Can’t tell	Yes	Yes	Yes	No	Can’t tell	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	No	No	No	Yes	Yes	No	Yes
NA	NA		NA	NA	NA	Yes	NA
Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes
Yes	No	Can’t tell	Yes	No	Can’t tell	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Can’t tell	Can’t tell	Yes	Yes	Can’t tell	Can’t tell	Yes	Yes
Yes	Yes	Can’t tell	Yes	Yes	Yes	Yes	Yes
Yes	No	Yes	No	No	No	Yes	Yes
NA	NA	NA	NA	NA	NA	NA	NA

In addition, an unpleasant first dental visit, dissatisfaction with previous appointments, uncertainty about dental treatments, children's aversion to dental visits and dental care-related anxiety can have a negative effect with regard to parents' adherence to recommended dental visits by their children (Brickhouse et al., 2009; Goettems et al., 2012; Leroy et al., 2013; Naidu et al., 2012; Vanobbergen et al., 2007)

Parental awareness of social demands (that is, subjective norms) that make them responsible for maintaining their children's health (including oral health), in addition, to school requirements for dental checkups, can improve parental intentions and act as a positive predictor of children's dental attendance (Kelly et al., 2005; Naidu et al., 2012). Moreover, researchers in several studies identified factors that parents perceived as impediments to regular dental attendance by their children; these included a lack of control over their children's oral health behaviour, the high cost of dental services, school examinations and class schedules (time constraints), difficulty accessing dental services, low household income, travel distance and time required to access dental services, and communication difficulties with oral health care providers (Denloye et al., 2004; HOeft et al., 2011; Liena Puy et al., 1997; Vignarajah, 1997).

2.4.4 Provider-level factors

Factors identified at the provider level that may have influenced parental decisions to adhere to dental services for their children included providers' communication skills (especially for immigrants of diverse ethnicity), providers' professional skills, difficulties accessing dental services (such as lengthy waiting lists), limited professional services for young and disabled children, and low level of respect for patients accessing public dental services (Brickhouse et al., 2009; Eckersley and Blinkhorn, 2001; Hoeft et al., 2011; Naidu et al., 2012).

2.4.5 System-and structural-level factors

Researchers identified several factors at the system and structural levels that influenced adherence to regular dental visits (Kelly et al., 2005; Yuan et al., 2007).

Table 2-3: Critical appraisal of qualitative studies.*

QUESTIONS PERTAINING TO METHODOLOGICAL	REVIEWERS' ASSESSMENT, ACCORDING TO STUDY				
	Eckersley and Blinkhorn, ³⁸ 2001†	Hoefst and Colleagues, ³⁶ 2011	Kelly and Colleagues, ⁴⁰ 2005	Naidu and Colleagues, ⁴¹ 2012	Vanobbergen and Colleagues, ³⁷ 2007
Is Study Relevant to Project Needs?	Yes	Yes	Yes	Yes	Yes
Does Report Address a Clearly Focused	Yes	Yes	Yes	Yes	No
Is Choice of Qualitative Method	Can't tell	Yes	Yes	Yes	Can't tell
Was Author's Position Stated Clearly?	Yes	Yes	Yes	Yes	Yes
Was Sampling Strategy Clearly Described and	No	No	Yes	Yes	Yes
Was an Adequate Description of Data Collection Method	Not applicable	Can't tell	Yes	Yes	Yes
Were Procedures for Data Analysis/ Interpretation Described and	Yes	Can't tell	Yes	No	Can't tell
What Are the Primary Findings?	No	Yes	Yes	Yes	Yes
Are the Results Credible?	Yes	Can't tell	No	Yes	Yes
Can the Results Be Applied to Local	Yes	Can't tell	Can't tell	Can't tell	Can't tell
Were All Important Outcomes/	Yes	Yes	Yes	Yes	Yes
Accept Study Findings for Further Use?	Can't tell	Can't tell	Can't tell	Can't tell	Can't tell

* Source: Weightman and colleagues.²³

These include referrals from family physicians and pediatricians, collaboration between communities and health care professionals, community-based education of parents about children's oral health, parents and caregivers' general reliance on health-related institutions, perceived discrimination in the Medicaid system, trust in the quality of the Medicaid system, and school schedules and examinations (time constraints) (Kelly et al., 2005; Yuan et al., 2007). Figure 2.2 presents the three main categories identified in this study and their correlations.

Risk-of-bias assessment in included studies: Overall, the studies included in this systematic review attained a medium methodological quality, according to the grading method

used (Weightman et al., 2005). Table 2.2 presents a critical appraisal of the quantitative studies and the quantitative part of the mixed-methods study. Table 2.3 presents a critical appraisal of qualitative studies. We conducted a qualitative synthesis only; a meta-analysis was not possible owing to the type of data collected.

2.5 Discussion

Children generally face more barriers to obtaining dental care services than they do accessing primary medical services (Valachovic, 2002). On the other hand, high degrees of availability and accessibility of care, although important, do not necessarily lead to better utilization of services (Cohen et al., 1967). Despite clear evidence of the positive impact of regular dental attendance on children's oral health and quality of life (Luzzi and Spencer, 2008; Murray, 1996; Sheiham et al., 1985) the underutilization of dental services remains of great concern in oral health promotion policies for children (Amin, 2011).

Therefore, given the prevalence of ECC and the importance of regular dental attendance as the third main component of the behavioural level of preventive oral health (after oral hygiene and diet) (Monroy, 2007), we looked for evidence of influencing factors in reliable qualitative and quantitative studies. Investigators in the included studies used cross-sectional and quasi-experimental or randomly experimental methods, as well as a focus groups conducted with an in-depth interview design.

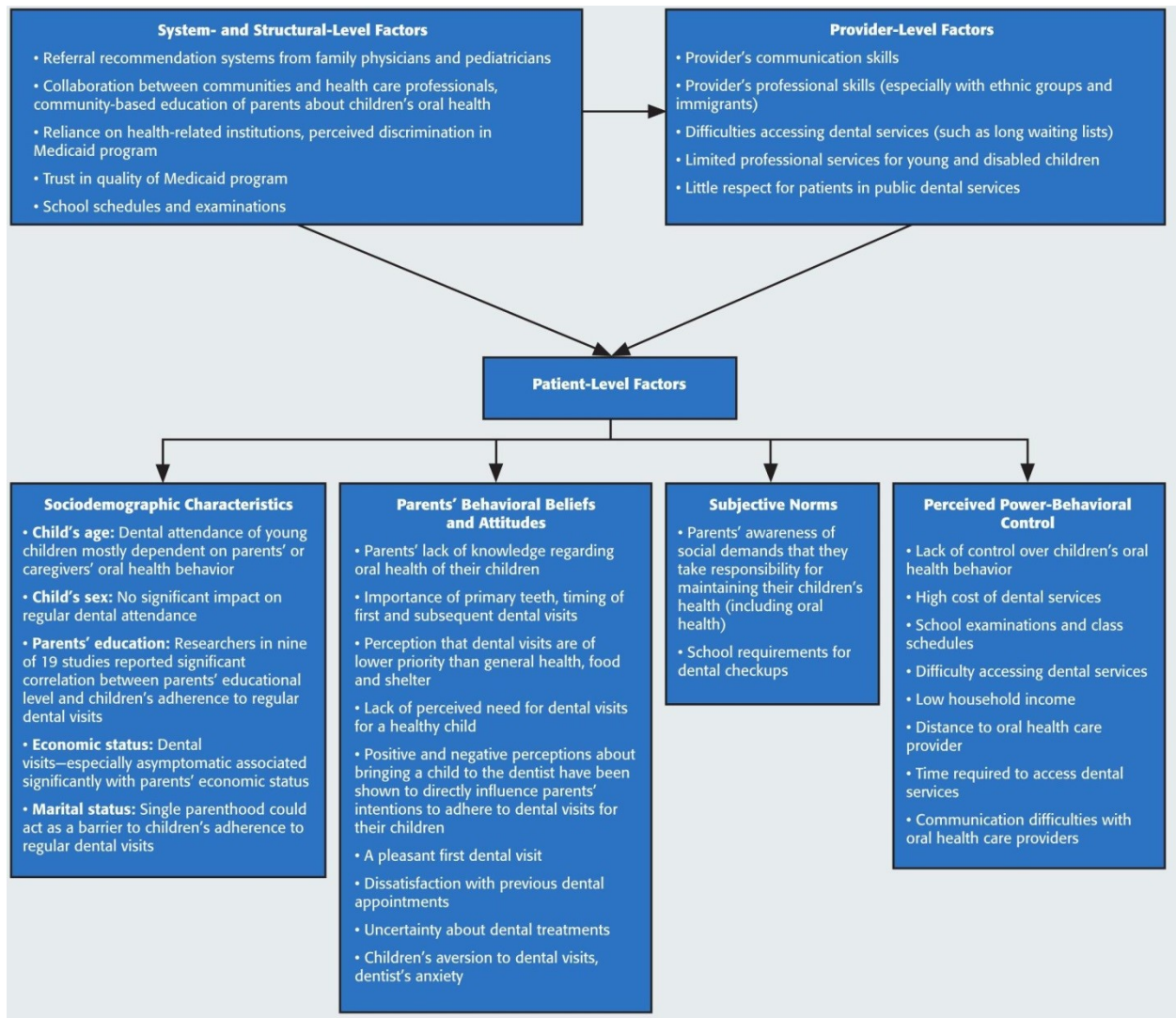


Figure 2-2: Flow diagram of patient-level, provider-level and system- and structural-level factors, as classified by Scheppers and colleagues (2006), that influence children's dental attendance, according to systematic review findings.

One limitation of this systematic review was our use of the PRISMA statement, which focuses primarily on randomized clinical trial reports as a guideline for clarity and transparency (Moher et al., 2009). No reporting guidelines, to our knowledge, have been developed specifically for observational studies. In addition, although we used the Health Evidence Bulletins Wales methodological quality assessment tool to assess bias risk, because of the nature of the outcomes evaluated, we were unable to use it objectively to give more weighting to outcomes of studies with a lower risk of bias. However, this might not be a significant limitation, as almost all the studies in our systematic review had a similar risk of bias.

In this review, we identified diverse determinants of adherence to dental attendance. The main foci of the included studies were socio-demographic factors, attitudes based on behavioural beliefs, perceived power and behaviour control, and subjective norm determinants at patient, provider and system levels. Researchers in most of the studies who used the above determinants discovered more barriers than facilitators to regular dental attendance among vulnerable children in low-income households, immigrants of diverse ethnicity and those with a medical history of illness. The participants in these studies primarily were parents or caregivers, because children's oral health behaviour primarily is based on parents' decisions (Cafferata and Kasper, 1985; Hickson and Clayton, 2002)

Although nearly all of the selected studies attained a medium methodological quality according to the grading method used (Table 2.2 and Table 2.3), we identified some factorial differences and similarities. For instance, the demographic characteristics of the participants varied. Some researchers included only age, sex (Amin, 2011; Denloye et al., 2004; Eckersley and Blinkhorn, 2001; Liena Puy et al., 1997; Vignarajah, 1997; Yuan et al., 2007) or both, whereas others included the educational level of parents, household income, family status, ethnicity, distance traveled and medical history (Brickhouse et al., 2009; Goettems et al., 2012; Leroy et al., 2013; Talekar et al., 2005; Vanobbergen et al., 2007; Wang and Aspelund, 2009). On the basis of these and other variables, we found discrepancies in the findings. Studies conducted by Amin (2011), Rodd and colleagues (2007) and Wang and Aspelund (2009) showed no significant association between dental attendance and demographic characteristics such as age, sex, income and parents' educational level, whereas other studies (Brickhouse et al., 2009; Denloye et al., 2004; Goettems et al., 2012; Liena Puy et al., 1997; Quinonez et al., 2008; Talekar et al., 2005) showed significant correlations, either as barriers or facilitators.

This latter evidence confirms the findings of previous reports showing significant correlations between regular dental visits and socioeconomic characteristics such as income, education and geographical location of participants (Kegeles, 1974; Newman and Anderson, 1972). Investigators in several studies reported that subjective norms were less influential than were other determinants of dental attendance; thus, some investigators (Amin, 2011; Goettems et al., 2012; Rodd et al., 2007; Talekar et al., 2005) highlighted the need for further investigations into the effect of psychosocial determinants of oral health behaviours. Kegeles (1974) and Ball

(1996) made a similar suggestion, but we excluded their studies from this systematic review because they lacked an age category (Ball, 1996).

Although a review of the literature reveals ongoing interest in the topic of dental attendance, the underutilization of dental services persists for young children, especially among low-income and immigrant families.

Ball (1996) divided the major determinants of oral health behaviours (including dental visits) into four main categories: cultural factors such as family/community cultural perceptions; social factors such as reference groups (those that directly or indirectly influence one's attitudes or behaviour) and aspirational groups (those to which a person aspires); personal factors such as age and economic circumstances; and psychological factors such as motivation, beliefs and attitudes. Similarly, attempts by Kegeles (1974) to identify psychosocial factors motivating people to seek and obtain preventive dental care resulted in the author's finding fewer studies with a focus on facilitators. Therefore, our finding that investigators in more studies explored barriers rather than facilitators is consistent with Kegeles's findings.

Ball (1996) and Kegeles (1974) suggested that motivation is a key factor in determining utilization of dental services, a finding similar to that for other health care services. Children rely on their parents' or caregivers' motivation, particularly concerning health behaviours involving a financial outlay. Ball (1996) argued that people have biogenic (for example, hunger or thirst) and psychogenic needs (for example, recognition or esteem). Biogenic needs are more intense motivators than are most psychogenic needs.

Given that the adherence to preventive dental visits is associated partly with psychogenic needs, further research is required to better understand factors that influence psychogenic perceptions of parents regarding their children's regular dental attendance. Consequently, we found the need for a paradigm shift toward investigating the psychosocial determinants, and this

was the main objective of some studies (Amin, 2011; Gottems et al., 2012; Kellye et al., 2005; Talekar et al., 2005; Vanobbergen et al., 2007) included in this review. However, because researchers in these studies adopted a satellite approach (that is, an isolated approach) rather than a theory-driven approach, their identification of psychosocial barriers and facilitators was less significant.

A solution to the challenge of identifying factors that have an impact on adherence to dental visits might be found in similar studies of adult participants that involved the use of TPB to collect and analyze data. For example, Luzzi and Spencer (2008) found that attitude and subjective norm had a positive effect on dental visits, whereas control perception had a negative effect (Luzzi and Spencer, 2008). Another recent study conducted by Anderson and colleagues (2013) highlighted the significance of subjective norm-based messages and satisfaction with the dentist, as well as environmental constraints in dental care-seeking behaviour, which we also identified in this systematic review (Anderson et al., 2013). The successful application of TPB in adult populations might indicate its potential success in addressing psychosocial determinants of children's adherence to regular dental attendance.

Finally, the main role of systematic reviews is to distill knowledge and to provide appropriate guidelines for improving health practices, effective health services and the overall function of the health care system. Although a review of the literature reveals ongoing interest in the topic of dental attendance, the underutilization of dental services persists for young children, especially among low-income and immigrant families. In this systematic review, we identified several studies in which researchers explored determinants of children's adherence to dental visits; we also highlighted the factor of "motivation" and its potential to defeat the identified barriers, many of which were linked to psychosocial factors.

2.6 Conclusions

In this systematic review, we identified demographic, socioeconomic, and structural and cultural factors that had a strong potential to act as barriers to regular dental attendance by children in various circumstances. On the basis of the order of importance, we identified structural factors, health policy decisions, community factors, and cultural and demographic characteristics that facilitated children's regular dental attendance. When making oral health recommendations, dental professionals should identify and consider barriers to and facilitators of parents' adherence to regular dental visits and to other aspects of professional recommendations for their children. Further research is needed to investigate psycho- social determinants of children's adherence to regular dental visits among at-risk populations

3. Chapter Three: Conceptual Framework

This chapter introduces the conceptual framework that shaped this study, including an explanation of different social cognition models relevant to considering oral health behaviour practice to prevent EEC. This is followed by a detailed discussion of the theory of planned behaviour and its components. At the end of the chapter, the application of the theory of planned behaviour in health, oral health, and oral health of children are presented.

3.1 Conceptual Framework and Oral Health

Since 2000, several initiatives have been taken at national and international levels to enhance the performance of public health systems as the core components of the global health system and quality of life (Handler et al., 2001). In the absence of a conceptual framework for the evaluation of a health system's performance, selection of performance indicators is impossible (Handler et al., 2001). Oral health is a fundamental component of overall health; the high prevalence of oral diseases around the world has led to their being considered a major global public health problem (Ajayi and Arigbede, 2013). Evidence has shown biomedical treatment is not enough to put an end to oral diseases, rather the effective conceptual frameworks mediated by theories required to predict, explain, and change health behaviour and implement appropriate policy at various levels (Paina and Peters, 2012; Peters and Bennett, 2012; Sutton, 2001). The term *health behaviour* refers to any behaviour that has a potential positive or negative impact on one's health status, either by increasing or decreasing health risk factors (Sutton, 2001). *Social cognition models* are used in a broad body of research to explore the role of social cognitive factors in predicting health behaviours (Abraham et al., 2000).

3.2 The Social Cognition Models

Given that social cognition models (SCM) focus on how individuals make sense of social situations (Conner and Norman, 2005), the term 'social cognition models' refers to a family group of theories that share similar conceptualizations for their constructs, even when they are different. Accordingly, each model specifies a number of cognitive and affective factors such as

'*beliefs and attitudes*', which are considered proximal behaviour determinants (Sutton, 2001). These theories assume that the effects of distal factors like social, structural, cultural, and personality characteristics, are mediated by proximal factors such as beliefs and attitudes. Based on the mediated components, these theories are categorized into four major health models: the Health Belief Model (HBM), the Protection Motivation Theory (PMT), the Self-Efficacy Theory (SET), and the Theory of Reason Action (TRA) and its improved model, the Theory of Planned Behaviour (TPB) (Sutton, 2001). In contrast to distal factors, proximal factors are assumed to be subject to change by providing relevant health knowledge and strategies for action (Sutton, 2001). Therefore, social cognition models could be considered as base models for the development and implementation of health behaviour interventions such as using the social cognition approach for compliance with protective behaviours for oral health (Tedesco et al., 1991).

3.2.1 Health Belief Model

The health belief model (HBM) was developed by a group of public health psychologists in the 1950s, who were seeking to explain the public's non-adherence to preventive health behaviours such as immunization and screening (Conner and Norman, 2005). The HBM, with its four core constructs, is still one of the most commonly used models for predicting health behaviours (Sutton, 2001). The first two core constructs, *perceived susceptibility* and *perceived severity*, are linked to perceived threat of a particular disease, while *perceived benefits* and *perceived barriers* are linked to possible actions that an individual will perform in order to reduce the risk or severity of the disease (Sutton, 2001). Two separate meta-analysis reviews have been conducted to show the calculated significance ratios for each HBM construct. The meta-analysis conducted by Janz and Becker (1984) identified *perceived barriers* as the most significant predictor of behaviours, while *severity* counted as the least significant predictor in prospective studies (Janz and Becker, 1984). Similarly, Harrison and colleagues (1992) found that *perceived benefits* and *barriers* had a significantly stronger effect in prospective studies, and that *severity* had a stronger effect in retrospective studies (Harrison et al., 1992).

Although the HBM has been used for more than half a century to predict health behaviour and expostulate health behaviour changes such as successful prediction and framing of

cancer screening and HIV-protective behaviours, the model suffers from some limitations and challenges (Glanz et al., 2008). Furthermore, while the HBM's simplicity enabled researchers to identify constructs that enhanced the application of the theory for short-term interventions, this same simplicity also created some major limitations. For example, although severity and perceived susceptibility (two constructs in the HBM) are considered strengths in comparison with a model that conceptualizes threats as perceived risk alone, the relationship between risk and severity in performing a health threat is not always clear (Glanz et al., 2008). According to the HBM, perceived benefits and barriers should be considered strong predictors of change in behaviour when the perceived threat is high. However, in situations where benefits are perceived to be very high and barriers very low, perceived threat is considered to a lesser extent. One example is flu vaccination compliance in areas where the vaccination is readily available and easily accessible (Glanz et al., 2008).

Furthermore, the lack of emotional constructs in the HBM limits its ability to predict health behaviours, as the psychological factors are missing (Glanz et al., 2008). Other factors, such as social, economic and environmental conditions, can also shape barriers to health action and are mostly missing in the HBM (Nutbeam et al., 2010). Ultimately, however, the application of the HBM in short-term traditional preventive health behaviours, such as screening and immunization, has been very successful, whereas '*cue to action*', a component of the HBM that is often missing in the research, is less useful in cases of long-term interventions where perceived threat and benefits are high and perceived barriers are low (Glanz et al., 2008; Nutbeam et al., 2010).

3.2.2 Protection Motivation Theory

Protection motivation theory (PMT) is an adaptation of the HBM. It was developed in 1983 as a framework to understand how people respond to fear appeals – specifically, whether fear appeals could influence attitudes and behaviours on their own, or whether their effects were more indirect (Conner and Norman, 2005; Rogers et al., 1983). Fear appeals refers to persuasive messages that attempt to arouse fear in order to divert behaviour through the threat of impending danger or harm (Maddux et al., 1983). According to Sutton (2001), protection motivation implies the motivation to protect oneself against a health threat; operationally, it is defined as the

intention to adopt the recommended action. The model specified four intention determinants: *vulnerability* and *severity*, which are equivalent to *perceived susceptibility* and *severity* in the HBM; *response efficacy*, which is the belief in the efficacy of the recommended action; and *perceived self-efficacy*, which is an individual's belief in her/himself to successfully perform the recommended action (Bandura, 1997). Among the five social cognition models, the PMT has undergone the most experimental tests. The two meta-analysis conducted on PMT studies have found support for each of the main PMT variables to predict intentions or/and behaviour, with *self-efficacy* being shown to have the most consistent and robust effect (Floyd et al., 2000; Milne et al., 2000).

3.2.3 Self-efficacy Theory

Self-efficacy theory (SET) is a subcategory of social cognition theory, which specifies the two key behavioural constructs of *perceived self-efficacy* and *outcome expectancies* (Bandura, 1986; Sutton, 2001). Perceived outcome expectancies could have positive or negative consequences for performing behaviour. *Risk perceptions* and *behaviour intention* are additional constructs that were added to the main components in one study (Schwarzer and Fuchs, 1996). Although there is substantial evidence to support the predictive validity of *self-efficacy*, there is no published meta-analysis on self-efficacy theory (Sutton, 2001).

3.2.4 Theory of Reasoned Action and the Theory of Planned Behaviour

The theory of reasoned action (TRA) (Ajzen and Fishbein, 1980) originates from social psychological research focuses on attitudes and attitude-behaviour correlations. The TRA was developed to explain human behaviour (including health behaviour) that is under volitional control (Sutton, 2001). The general agreement on the rational-based action of people in certain circumstances is the underlying concept in the TRA for the predictability of behaviour (Nutbeam et al., 2010). In other words, people's intentions are stimulated by immediate determinants and are the single best predictor of that behaviour (Nutbeam et al., 2010; Sutton, 2001). Thus, the TRA assumes that intention is a function of '*attitude towards the behaviour*,' which refers to the overall evaluation of an individual in performing a certain behaviour, and '*subjective norm*,' which refers to the perceived expectations of 'important others' in order to perform the

individual behaviour in question (Nutbeam et al., 2010; Sutton, 2001). Furthermore, the TRA assumes that a person's salient behavioural beliefs could be reflected in her/his attitude (Sutton, 2001). This means that a favorable attitude towards the behaviour will be performed if an individual believes a positive consequence will result from her/his action (Sutton, 2001).

3.3 Theory of Planned Behaviour

The theory of planned behaviour (TPB) was developed as an extended version of the TRA, given that not all behaviours are under volitional control due to lack of skills, opportunities, resources, and cooperation between systems (Ajzen, 1991). Hence, the TPB includes behaviours that are not under volitional control. *Perceived behaviour control* was the extended TRA's variable and refers to the ease or difficulty attached to a behaviour as perceived by an individual, whose perception is assumed to reflect past experience and anticipated barriers (Sutton, 2001). Similar to subjective norms, which are assumed as a function of normative beliefs, Ajzen (1991) perceived behaviour control as also being a function of control beliefs with a direct influence on intention.

3.3.1 Similarities and differences of the Social Cognition Models (SCM)

All five social cognition models entail some similarities and differences. The models are based on the assumption that individuals are future-oriented and that their future actions are a direct correlation of the cost/benefits dialectic, along with complementary constructs that feature significant overlaps (Weinstein, 1993). For instance, perceived susceptibility and vulnerability are common constructs in both the HBM and PMT; likewise, perceived behavioural control and self-efficacy are almost the same, which calls for a clear definition for each construct based on the conceptual ground of each (Sutton, 2001). Social cognition models also are criticized for their lack of rationale for why people do certain things and make certain decisions. The models do not conceptualize cost-effective decisions perceived wise and optimal decisions, sometime misguided decisions resulting from lack of awareness and incorrect beliefs. (Sutton, 2001).

Social cognition models differ based on the content of the cognitive factors they identify. The health belief model and the key constructs of the PMT are limited to *perceived susceptibility*

and *perceived severity*, targeting a health threat. In contrast, the SET, TRA and TPB have the capacity to be applied to diverse domains or behaviours (Sutton, 2001). Therefore, the main point in searching for an appropriate conceptual framework is not which model is superior to others, but which model has “relative utility and changes in relative utility with different behaviours and situations over time” (Maddux et al., 1995; Sutton, 2001). Given that the objective of this study is ‘identifying the psychosocial determinants of parental adherence to preventive dental attendance (PDA) for preschool children among Filipino immigrants’, and considering that children in immigrant communities are in the high-risk category (while little is known about oral health-related beliefs, attitudes, and behaviours of this community regarding their children and preventive measures), it appears that the construct “*subjective norm*” in the theory of planned behaviour made this theory the most relevant to this study.

According to Nutbeam and colleagues (2010), the TPB can be very successful for shaping the type of information that is needed from a new target group before developing a program (Ajzen, 1985; Nutbeam et al., 2010). They argue that the TPB has a significant potential to highlight the need to understand the beliefs of a target group (e.g., a minority ethnic community) about a social phenomenon. These beliefs include the causes of the phenomenon, the ‘significant others’ who have an influence on people’s beliefs and behaviour, and the actions that they feel they can confidently take to reduce the risk factors, including identifying others who shape their decisions (Ajzen and Fishbein, 1980; Ajzen, 1985; Nutbeam et al., 2010). In addition, the TPB has a relatively high degree of standardization of measures based on published recommendations and compatibility principles (Ajzen and Fishbein, 1980), and focuses “on the relationship between attitude, intention, and behaviour, which develop a chain, linking behavioural beliefs and normative beliefs to behavioural intention via attitude and subjective norms” (Ajzen and Madden, 1986). Finally, evidence from hundreds of studies, summarized in numerous meta-analyses and reviews, has shown that the constructs of TPB (*attitude*, *subjective norm*, and *perceived control*) are designed to successfully explain a large proportion of the variance in behavioural intention. These constructs can also predict a number of different human behaviours, including health behaviour in specific contexts (Ajzen, 1980).

3.3.2 Intention

According to Ajzen (2002), behavioural intention is an indication of an individual's readiness to perform a given behaviour, and intention is assumed to be an immediate antecedent of behaviour. There is a general agreement among social psychologists that human behaviour is mostly goal-oriented (Lewin, 1951). This means that all actions or activities will have a designed plan in advance, and human beings are aware of the type of action needed to achieve the goal (Ajzen, 1985). On the other hand, actions are controlled by intention, although not every intention will be carried out (e.g., some of them could be abandoned and some might be modified to fit changing circumstances) (Ajzen, 1985). Based on these concepts, the theory of planned behaviour assumes that “a central factor to perform[ing] behaviours of different kinds can be predicted with high accuracy from attitudes toward the behaviour, subjective norms; and these intentions, together with perceptions of behavioural control” (Ajzen, 1991, p. 179). Intention also is linked to individual motivation, which predicts behaviour by understanding how much a person desires the perceived outcome and how much effort that person is willing to dedicate to performing the behaviour (Ajzen, 1991). In other words, theory predicts that an individual is most likely to intentionally adopt, maintain or change a behaviour only if, for instance, he/she perceives a health benefit, and if performing the act or exhibiting/modeling the behaviour is socially rewarding (Nutbeam et al., 2010).

3.3.3 Attitude toward Behaviour

Attitudes, as a predictor of behavioural intention, are determined by an individual's belief that desired outcomes can be achieved as a consequence of certain actions, especially those that are beneficial to health (Nutbeam et al., 2010). Fishbein and Ajzen (1975) have defined attitude as “a learned disposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein and Ajzen, 1975). Attitude is recognized as a salient function of behavioural beliefs. This is significant, considering that among a large number of beliefs about a particular behaviour an individual may possess, only some are likely to be considered ‘salient’ (Conner and Norman, 2005). Indeed, in studies using the TPB, several have found a strong link between attitudes and behavioural beliefs (Armitage and Conner, 2001a; Van den Putte).

3.3.4 Subjective Norms

Subjective norms, as the only social component of the TPB, is considered a function of normative beliefs, which refers to an individual's perceptions or beliefs about specific people's thoughts or preferences around the performance of certain behaviours (Nutbeam et al., 2010). Essentially, individuals who are motivated to meet the expectations of others are more likely to accept a new action if they perceive that the action would be appraised positively by significant others in that individual's life. Conversely, individuals who are less motivated to comply with the opinions of significant others remain neutral in their actions (Glanz et al., 2008). These two above components, addressed by the TPB, become more comprehensive when the third component, *perceived behavioural control* construct, is added to the model (Ajzen, 1985).

3.3.5 Perceived Behavioural Control

As mentioned earlier, the TPB (Ajzen, 1985) is an adjusted version of the original model. It adds *perceived behavioural control* as a construct that deals with numerous factors beyond volitional control (Ajzen, 1991; Nutbeam et al., 2010). *Perceived behavioural control* judgments are under the influence of beliefs about accessibility to necessary resources and opportunities to successfully perform the behaviour, which is weighted by each factor's perceived power (Ajzen, 1991). On the other hand, *control beliefs* refer to the perception of facilitating or inhibiting factors that one perceives towards performing a behaviour. These factors include internal aspects (e.g., information, personal deficiencies, skills, abilities, and emotions) as well as external controls, (e.g., opportunities, dependence on others, and technical barriers) (Conner and Norman, 2005). Adding *perceived behavioural control* is a recognition of the greater significance of intention, in that an individual feels that he/she has more control over enacting a behaviour when mediated by a person's perceived power in relation to a certain situation (Nutbeam et al., 2010). Including the construct of *perceived behavioural control* in the TPB places it within a more general framework that comprises relations among beliefs, attitudes, intentions and behaviour, whereas this construct, together with behaviour intention, can also directly predict behavioural intention (Conner and Norman, 2005).

3.4 Theory of Planned Behaviour and Health

The theory of planned behaviour has been widely used to predict different ranges of behaviours, including health-relevant behaviours (Conner and Norman, 2005). Among a series of meta-analyses and reviews of the TPB, Godin and Kok (1996) have reported on the application of TPB to health-related behaviours in a number of studies (Godin and Kok, 1996). In their review, they verified the efficacy of 58 health behavioural applications of the TPB to explain intention or to predict behaviour. Some of the behavioural categories under review were addictive behaviours for cigarettes, alcohol and drugs; eating disorders; clinical and screening behaviours for cancer; preventive health checkups; exercising; HIV/AIDS related behaviour; and oral hygiene (Godin and Kok, 1996). Their results indicate that the TPB was successful in explaining intentions in 56 studies (58 applications), while attitude toward the action and perceived behaviour control were significant responsible variables in explaining variations of intention.

3.5 Theory of Planned Behaviour and Oral Health

Considering the supportive evidence of TPB, and its flexibility for inclusion of additional variables such as knowledge, past behaviour and moral norms (the rules of morality that people feel ought to follow), the TPB has been found to be an attractive model for application in oral health studies. Anderson and colleagues (2013), Dumitrescu and colleagues (2011), Luzzi and Spencer (2008), and Ouellette and Woods (1998) are some examples of oral health-related studies where the TPB was applied successfully, although a few of these studies also used additional constructs based on their study objectives. One instance of this is the addition of environmental constructs by Anderson and colleagues (2013), who showed the effectiveness of an extended TPB model, based on the outcome of their study. Specifically, they added 'satisfaction with the dentist' and 'environmental constraints' to the traditional model in order to understand routine dental check-up intention, behaviour, and the use of subjective norm-based messages to prompt dental check-ups among adult target groups. Similarly, Dumetrescu et al. (2011) successfully used the TPB in predicting intention to improve oral health behaviour among 153 first-year medical students (Dumitrescu et al., 2011). Their findings revealed that attitude,

perceived behavioural control and oral health knowledge are predictors of intention for improving oral health behaviours. Luzzi and colleagues (2008), on the other hand, conducted a study using the TPB to evaluate patterns of psychosocial factors and health beliefs by examining associations between dental attitudes and beliefs of public dental service users and dental visiting intentions and behaviours. Their outcome revealed that attitudes, subjective norms, and perceived behavioural control were significant predictors of intention ($P < 0.05$). Nevertheless, despite what appears to be an increase in the application of the TPB in oral health research, applications of the TPB in children's oral health studies is still seems to be new.

3.5.1 Theory of Planned Behaviour and Oral Health of Children

Behavioural factors are the most important determinants in the oral health of preschool children (Van den Branden et al., 2013c). Inappropriate oral hygiene habits, frequent consumption of sweetened snacks and drinks, and lack of preventive dental visits are important risk factors for caries in young children (Declerck et al., 2008). Without a better understanding of their determinants, the cultivation and modeling of behaviours relevant to oral health and the promotion of oral health (especially among children) is difficult.

The theory of planned behaviour seems to have the capacity to explain, predict, and suggest strategies for oral health behaviour change in this target group. To date, however, the TPB has only been applied in studies exploring the oral health of preschool children to a limited extent (Amin et al., 2014; Van den Branden et al., 2012; Van den Branden et al., 2013a). Given that the oral health of preschool children mostly depends on parental beliefs and behaviours, Van den Branden and colleagues have, in their two studies, successfully used the TPB to measure determinants of oral health behaviours in parents of preschool children, and the effects of time and socio-economic status on the determinants of oral health-related behaviours of parents of preschool children (Van den Branden et al., 2012; 2013b; Van den Branden et al., 2013c) In these studies, the TPB applications succeeded in finding a significant percentage of variance in intention and behaviours for explaining the model. For instance, Van den Branden and colleagues (2012) successfully assessed the changes, over time, in determinants of parental oral health-related behaviour using the TPB. As well, Amin and colleagues (2014) used the TPB to evaluate the impact of an educational workshop on parental knowledge, attitude, and perceived

behavioural control regarding their children's oral health. The study illustrated significant differences in the participants' knowledge of caries, preventive measures, and benefits of regular dental visits after the workshop (P value < 0.05). A marked improvement was also found in parental attitudes toward preventive measures and their perceived behavioural control ($P < 0.05$). Additionally, the TPB application in this study was successful in showing noteworthy changes in the parents' intentions to take their children to a dentist within the six months following the workshop (P value < 0.05). To the best of our knowledge, the present study would be the fourth to use the TPB but the first to be chosen as an adequate theory to inform the interview guide in a qualitative study that focuses on immigrant (Filipino) parents of preschool children as a target group.

3.6 Summary

A number of psychosocial theories have been developed to explain, understand, and conceptualize strategies for change of certain health behaviours by focusing on individual or certain group characteristics. The social cognition models include some similar behavioural theories. These theories assume that the effects of distal factors such as social structural, cultural, and personality characteristics are mediated by proximal factors like beliefs and attitudes, which, based on mediated components, can be categorized into the following four health models: the Health Belief Model (HBM), the Protection Motivation Theory (PMT), the Self-Efficacy Theory (SET), and the Theory of Reasoned Action (TRA) and its improved model, the Theory of Planned Behaviour (TPB). Among these models, the TPB (1985) was most relevant to this study. The TPB model considers that the majority of individuals' social behaviours (including health-related behaviours) are under volitional control. In turn, intention itself is under the influence of two other determinants – namely, attitude towards the behaviour (i.e., an individual's evaluation of doing certain actions) and subjective norm (i.e., perceived social pressure to perform the suggested behaviour). Essentially, individuals are more likely to accept a new action if the action would be appraised positively by significant others in the individual's life. These two components, addressed by the TRA, are more comprehensive when the third component – perceived behaviour control – is added to investigate behaviours that are not under volitional control, such as giving up smoking or using a condom. Successful application of the TPB in similar studies in different target groups in recent years could be considered supportive for selecting the theory in this study. To the best of our knowledge, the present study would be the first to choose TPB as an adequate theory to inform the interview guide in a qualitative study to explore the patterns and norms perceived by Filipino parents regarding adherence to preventive dental attendance for their preschool children.

4. Chapter Four: Methods

In this chapter, research methods and the activities involved are described in detail. First, the research objectives and research questions are presented followed by the rationale for selecting a qualitative method with a focused ethnography approach. To follow, a review of previous studies using ethnography and focused ethnography in health and oral health is presented. The study design, ethical considerations, study participants, recruitment, data collection, and data analysis are discussed. At the end of this chapter is a description of the strategies that I used to ensure the rigour of the study and credibility of the qualitative findings.

4.1 Research Objectives

The purpose of this qualitative study was to explore, from a psychosocial perspective, how immigrant parents in Edmonton's fast-growing Filipino community perceive and experience the phenomenon of adherence to preventive dental attendance (PDA) for their preschool children.

4.2 Research Questions

- How do Filipino parents living in Edmonton perceive PDA for their preschool children?
- What psychosocial factors, structural barriers, and social norms influence parental adherence to PDA for their children?

4.3 Methodological Perspective

4.3.1 Qualitative method of inquiry

Qualitative methods are uniquely suited to exploring social phenomena about which little is known. In the present study, we considered qualitative inquiry to be an appropriate research method to answer our research questions, since little is known about oral health behaviours among Filipino parents for their young children. The lack of knowledge about psychosocial

influences affecting dental attendance among Filipino parents, the third largest ethnic minority in Alberta, makes a quantitative method with structured questionnaires an inappropriate choice for our study. Some research for children's oral health status of the first two largest immigrant communities, Chinese and South-Asians, in Edmonton are available in the literature. Qualitative inquiry as a naturalistic approach allowed us to explore, interpret, and obtain a deeper understanding of the phenomenon of interest within the real-world setting of the Filipino community (Savage, 2000).

There are many qualitative research methods, including grounded theory, phenomenology, and ethnography. The key to successful qualitative research lies in selecting the best method for answering the particular research questions (Richards and Morse, 2012). Although different qualitative methods are used for understanding the social phenomenon in context, the most important distinction among the methods is the theoretical underpinnings that will shape the type of story that can be told (Richards and Morse, 2012).

4.3.2 Ethnographic approach

Given that the objectives of our study were to explore the behavioural perceptions of preventive oral health from a Filipino perspective, ethnography was found to be the most appropriate approach among the different types of qualitative methods. This method is particularly apt to our study because it helps us to learn about Filipino parents' perceptions as well as psychosocial factors that culturally influence PDA. Ethnography enables us to illustrate how population norms can be manifested in individuals' attitudes and behaviours and influence the take up of any promotion interventions (Prout, 1996).

Ethnography also allows us to explore our objectives of this study in the Filipino community as a group of people within a complex, pluralistic society such as Edmonton (Fetterman, 2010; Higginbottom, 2004). It helps us access the beliefs and practices in the natural settings and contexts in which the phenomenon occurs, therefore providing a more holistic understanding of the influence of determinants surrounding health behaviours rather than focusing only on the outcome of a phenomenon (Morse and Field, 1995).

Ethnography has been used for decades in epidemiology and public health (Béhague et al., 2002; Carey, 1993; Kirmayer and Young, 1998; Thorpe et al., 2002). Based on the type of research questions, study objectives, and researcher's perspective, ethnography may take several forms including critical ethnography, feminist ethnography, institutional ethnography, and focused ethnography.

4.3.3 Focused ethnography

Focused ethnography was found to be a more appropriate approach for this study than conventional ethnography given the focused nature of our research questions (Mayan, 2009). There are several advantages to using a focused ethnography versus the conventional approach. Unlike conventional ethnography that is shaped by continual long-term field study (common in anthropology) to develop intensive multi-sensory experiences (Lüders, 2000), focused ethnography is characterized by a short-term field study (Knoblauch, 2005). Furthermore, the gathering of field notes in traditional ethnography typically takes a long time, whereas in focused ethnography large amounts of data are collected in a short time using recording devices. In this latter approach, short-term fieldwork results in intensive data on specific aspects of the studied field (Higginbottom et al., 2013; Knoblauch, 2005). Table 1 shows a comparison between traditional and focused ethnography, as provided by Knoblauch (2005).

Another difference between the two approaches is that traditional ethnography relies on open participation of the researcher in everyday field events, whereas focused ethnography focuses on one specific aspect of a field, such as exploring the behavioural intentions of oral health from a Filipino perspective, as in this study. Moreover, where conventional ethnography investigates everyday life, cultural events, and practices of individuals under study, focused ethnographies seek to understand actions, interactions, and communicative activities based on individuals' behaviour and beliefs surrounding the focused phenomenon of interest (Knoblauch, 2005).

Table 4-1: Comparison between conventional and focused ethnography

<u>Conventional ethnography</u>	<u>Focused ethnography</u>
Long-term field visits	Short-term field visits
Experientially intensive	Data/analysis intensity
Time extensity (Long-term data collection)	Time intensity (Short-term data collection)
Writing	Recording
Solitary data collection and analysis	Data session groups
Open (To any data emerged from everyday life)	Focused (On exclusive data related to the Focused research questions)
Social fields	Communicative activities
Participant role	Field-observer role
Insider knowledge	Background knowledge
Subjective understanding (Researcher's perspectives)	Conservation [Participants perspectives)
Notes	Notes and transcripts
Coding	Coding and sequential analysis

*Source: (Knoblauch 2005, p.7)

To sum up, the phenomena of inquiry in focused ethnography are pre-selected; the participant observation is very discrete within the study period (Morse, 2007), and data collection is highly focused on the exploring and answering research question (s) in short period of time.

4.3.4 Ethnography and health

Several previous ethnographic studies have explored behaviours related to healthcare issues. Two distinct examples, among many others, illustrate the use of ethnography in understanding the theoretical concepts behind the different social phenomena occurring in the hospital context. First, a prospective ethnographic study helped the researchers to better understand how 'intravenous drug administration errors' occur at educational and non-

educational hospitals contexts (Taxis and Barber, 2003). The theoretical concept developed from this study was successful in not only explicating the types, stages, and severity of the error incidents, but also suggesting some potential solutions for decreasing the rate of errors, such as improvement in the quality of training and equipment.

Second, an observational ethnography was used to investigate how psychosocial, cultural, spiritual, and organizational factors influence the experience of providing end-of-life care to residents who were dying in nursing homes (Kayser-Jones, 2002). In this study, critical ethnography facilitated the exploration of factors underlying many health problems of the residents (Kayser-Jones, 2002).

4.3.5 Ethnography and oral health

By using ethnography, researchers have gained a better understanding of cultural and contextual beliefs surrounding the oral health of diverse communities. For instance, one study explored oral health among seven ethnic groups including Filipino ethnicity, revealing the complexity of the respective psychosocial determinants (Riedy et al., 2001). This study conceptualized the impact of parental past/current attitudes, health beliefs, and behaviours surrounding children's oral health on developing early childhood caries (Riedy et al., 2001). The ultimate goal of this study was to provide theoretical guidance for a public health intervention in a multicultural population with a high rate of caries (Riedy et al., 2001). Similarly, ethnography was used to better understand how societal sectors, health beliefs, and practices lead to delays in seeking care among low-income preschool Latino children in rural California (Barker and Horton, 2008). This study also illustrated how complexity of contexts, such as lack of financial resources in the community and inadequate organization of professional dental services delivery, contribute to oral health disparities (Barker and Horton, 2008).

4.3.6 Focused ethnography and health

For more than a decade, focused ethnography has contributed to understanding aspects of public health to promote the health of small communities within certain societies. For example, researchers used focused ethnography to explore injury in children of low-income families from

several ethnicities residing in the United States to better understand the context of pediatric injury at the household level (Mull et al., 2001). The results of this study provided new insights that health professionals need in order to understand and prevent pediatric injury in the large group of Hispanic population (Mull et al., 2001).

To the best of our knowledge, the present study is the first focused ethnography in the field of oral to explore the context of PDA at the parental level.

4.4 Study design

Methodology entails theoretical positions for designing a research project and gives the researchers insight “through method, data collection strategies, analysis techniques, and the production and presentation of findings” (Mayan, 2009). Focused ethnography is grounded in the traditions of observation and description of the conventional ethnography—in addition to what is recorded within the short-ranged and not continual period of time (Knoblauch, 2005). In our study, we needed methodological congruence as well as research position to set the stage for ontology. A constructionist perspective also helped researcher-participants in our focused ethnography to co-create understanding of socio-culturally constructed of norms and patterns of our interested phenomenon of PDA among Filipino parents for their children (Denzin and Lincoln, 2005). In other words, we worked from a constructionist perspective to interpret, synthesize, and conceptualize the data within the socio-cultural context and structural conditions that parents in the Filipino community consciously or unconsciously use to account for their oral health behaviours.

We used triangulation strategy of data collections including, individual interviews, focus groups, observations, researcher’s reflexivity, and memos. By triangulation we refer to gaining multiple perspectives through different methods of data collection that data have been collected on the same topic and that address each other’s findings (Richards and Morse, 2012). We analyzed our data congruently, using thematic analysis strategy.

4.4.1 Context and rationale of study

Early childhood caries has been recognized by public health professionals as an alarming issue that needs to be addressed. The prevalence of oral health disparities is disproportionately higher among socioeconomic disadvantaged and cultural minority groups (Newacheck and Halfon, 2000). The Filipino community is one of the largest growing communities in Edmonton. Given the cultural diversity within the Philippines, several Filipino cultural groups with different languages and traditions live in Edmonton, communicate in English pretending no difference between them (Lazzarino, 2013). Despite these findings, there is limited information on the oral health of children in the Filipino community, which is the third largest minority group in Edmonton and in Canada. Therefore, we initiated a focused ethnography to answer two research questions: “How do Filipino parents perceive preventive dental attendance for their preschool children?” and “What psychosocial factors influence parental adherence to PDA for their children?”

4.4.2 Ethical considerations

We obtained ethics approval from the University of Alberta Research Ethics Board (Appendix 1). The community leader of the Filipino communities in the North and South of Edmonton also provided a letter in support of this research project (Appendix 2). We informed participants about the voluntary nature of their participation and gave them a written information sheet. We also read the information sheet approved by the University of Alberta Ethics Board (Appendices 3 and 4) to them before obtaining their oral consent and demographic surveys, and advised them that they could refuse to respond to any topic they found disagreeable and could end the interview at their discretion. We obtained a written consent letter from participants before their participation in the interviews and focus groups. We will keep all the materials and generated data in a secure and locked place for five years, and then we will have the documents shredded, recycled and disposed in a secure container using the University of Alberta recycling services. Within the five years, we will make these materials accessible for future use as specified in a data-sharing agreement that outlines data ownership, access, and use. The Principal

Investigator and participants signed this agreement, and the professional transcriber signed a confidentiality agreement (Appendix 5). Participants received oral hygiene supplier package as incentive at the end of the interviews and focus groups.

4.4.3 Sampling and recruitment

In qualitative inquiry data collection, the purpose is to identify a group of people who possess characteristics or lives relevant to the social phenomena being studied (Willig, 2001). We sought a purposive sample (Patton, 2005) of Filipino parents – mothers and fathers – for our study. Participants had to be self-identified members of the Filipino community, who spoke English, had lived in Canada for less than 10 years, and had children aged 2-6 years. Given the reported correlations between acculturation and identifications and health and psychosocial factors (Schwarz et al., 2010), we chose the inclusion criterion of “less than 10 years in Canada” to demarcate minimum estimated period time necessary for acculturation, and to distinguish recent immigrants from those who have been in Canada for a longer period of time. Acculturation is defined as a time-consuming merging of cultural processes in which individuals or groups of people receive new cultural practices and values (Schwarz et al., 2010). We also sought to include participants who were temporary foreign workers, because a large number of Filipino migrants living in Edmonton are temporary foreign workers. This category of Filipino immigrants experience a higher social and material deprivations caused by instability of their residential status and consequently exclusion from health and social benefits. In addition, we purposefully recruited two Filipino parents with a visitor visa in order to enrich our study with representatives from non-permanent resident group.

Participants were recruited from two Filipino communities residing in the south and north areas of Edmonton, Alberta, Canada, to benefit from the participation of two longer established Filipino communities in Edmonton who mostly possessed permanent visa or citizenship. Nevertheless, we faced serious obstacles in reaching the potential participants and finding an appropriate common time and suitable location for 6-8 parents to participate in focus groups due to their busy schedules. We used several recruitment strategies, such as approaching different organizations and individuals with potentially strong influences in the Filipino community, in

order to facilitate recruitment of the focus group participants. We also enhanced our maximum flexibility by offering to conduct interviews at any time and place convenient for the participants.

Our partners - the Multicultural Health Brokers Co-op and the Southside Pentecostal Assembly Church and First Filipino Alliance Church - identified and recruited all participants. The organizations extended invitations to potential participants via telephone calls for individual interviews, and via emails for focus groups. When individuals expressed a desire to be involved in the study, the relevant organization scheduled an interview at a time convenient for participants at their homes (for individual interviews) and at their churches following worship services (for the two focus groups). Community pastors and volunteer church staff helped with organizing the individual interviews and focus groups. Ultimately, 18 parents participated – six in individual interviews, and 12 in focus groups.

Our sample met the criteria for ‘appropriateness’ through selection of participants who have specific knowledge about and experience of the phenomenon under study, and for ‘adequacy’ when no new categories emerged from our analysis of data (Morse, 2003). We achieved data saturation after completion of four individual interviews and the first focus group. However, adding two more individual interviews and one additional focus group confirmed saturation.

4.4.4 Data collection strategies

We used three data collection strategies: Individual interviews, focus groups, and a demographic survey of participant characteristics. Researcher memos provided an additional data source.

We originally planned to conduct a few individual interviews to inform the interview guide that would later be used in the focus group data collection. We intended to continue data collection until we achieved saturation. However, unexpected challenges in the recruitment process for the focus groups changed our data collection plan to include six individual interviews and two focus groups.

Interview guide: We developed an open-ended interview guide to direct the individual interviews and the focus group discussions. The interview guide was customized and informed by the Theory of Planned Behaviour (TPB) (Ajzen, 1985) open-ended questionnaires, published in the manual for health services research (Francis et al., 2004). The interview guide (Appendix 6) helped us to explore the behavioural intentions of Filipino parents regarding preventive dental visits for their young children. It is important to mention that although the interview guide was informed by TPB, the theory was not meant to lead to deductive theoretical analysis of our data. Instead, in our inductive analysis, we used a process of coding the data without trying to fit them into the constructs of TPB (Braun and Clarke, 2006).

Questions mainly focused on oral health of young children and parents' perceptions and beliefs regarding preventive oral health measures, especially dental visits for their young children in Canada and in Philippines. Although the same interview guide was used for both individual interviews and focus groups, some minor changes were made based on the emerging data throughout the data collection process. For example, looking for parental perceptions of discrimination against immigrants resulted in revision of the interview guide. Through reflecting back to relevant comments, we encouraged the participants to fully describe their thoughts, worries, and concerns about the phenomena under study. As the interviews proceeded, we deliberately focused on key points that had emerged from analysis of previous interviews. This allowed the refinement of existing categories when new codes emerged. Finally, we used questions such as "Is there anything you'd like to ask me?" and "Is there anything else you'd like to tell me to help me understand better?". The last questions gave each individual parent in both individual interview and focus group a chance to add their last thoughts and to bring the conversation to a close.

Individual interviews: We completed four individual interviews between April 1st and May 29, 2014. The last two individual interviews took place in August (Participant mother) and September (Participant father) 2014. Each individual interview lasted about 25 to 30 minutes. Data collected from in-depth individual interviews illustrated individual behavioural perceptions about and intentions for PDA of each parent. This strategy added important data to our study. Six parents (one father and five mothers) felt comfortable expressing their personal perceptions and opinions about PDA for their children. Their answers were clearly imbedded in the context and

norms of where they were born and raised as well as the changes that occurred in their lives after migrating to Canada.

Focus groups: The first focus group took place in the Southside Pentecostal Assembly Church on June 15, 2014, with 6 participants (3 fathers and 3 mothers). The second focus group took place in the First Filipino Alliance Church on November 2, 2014, with 6 participants (5 mothers and 1 father). The focus groups in our study helped create group interactions inspired by findings from the individual interviews. The group format encouraged participants to explore not only their individual experiences, but also their shared perspectives. While their interactions took place without conflict, they sometimes held opposing perceptions regarding the same topic. For instance, in our first focus group, where the father in family B had a negative opinion about dental services in the Philippines, the mother in family C was happy with those same dental services. The differences expressed by the participants enhanced the richness of our data and analysis while the interviewer (PB: researcher) played important role to facilitate the interaction of the two participants.

Demographic survey: We used a short demographic survey to collection demographic characteristics of eighteen participants. The demographic data were important in highlighting links between study findings and the specific aspects of participants' characteristics, such as length of time living in Canada, income, oral hygiene practices, and insurance status.

Observational data-memos: The researcher's observations, reflexivity, ideas, interpretations, and moments of confusion were documented in memos. The memos helped to describe the setting. Reflexivity refers to "the process of being highly attentive to how and why you make decisions and interpretations throughout the research process, while at the same time critically evaluate your personal researcher's role within the moments of the study process" (Mayan, 2009, p. 137).

Data from individual interviews, focus groups, demographic surveys and observational interpretations reflected in the memos, provided us with our desired depth of understanding of the phenomena of interest (Fetterman, 2010).

4.4.5 Data management and analysis

Data handling: All interviews were audio-recorded digitally, after asking the participants if they were comfortable having the interviews and focus groups recorded. A professional senior transcriber transcribed the interviews verbatim (for later reference) into Microsoft Word Office software. The principal investigator (PB) re-checked the transcripts with the audio for the accuracy and completeness. The software tool NVivo 10 was used by principal investigator (PB) to manage the large volume of data. It enabled us to index, cross-index, code and sort transcribed interviews, imported step by step and in chronological order for congruent data analysis.

Analysis: We conducted thematic analysis of the transcribed data. Data analysis steps included: a) assigning codes for descriptive labels, b) sorting for patterns, c) identifying outliers or negative cases, d) generalizing with constructs and theories, and e) memoing reflective remarks (Roper and Shapira, 2000).

Data collection and data analysis were performed concurrently. We began the data analysis process by reading and re-reading the transcribed data to achieve immersion and familiarity with the transcribed data set as a whole, no points of surprise, questions, inconsistencies, and contradictions throughout these readings. We then read the data line by line to create codes by first choosing the exact words from the text that appeared to express key concepts or thoughts.

We continued with the interviews, data generation, and data analysis until we reached saturation of the emerging categories; likewise, we continued gathering data until each category was rich, thick, and replicated. This iterative, cyclic, and self-reflective process challenged our preliminary interpretations to generate new understanding of the data, facilitated by further data collection, if necessarily. We started concurrent data collection and data analysis from the first step of study process. For instance, in the first and second individual interviews, participants several times emphasized low priority of PDA for children. This finding led us to recognize the lack of questions about parental perceptions of oral health priority in our interview guide and re-consider the priority concept in our further interviews. We also made notes or records of the first

impressions or thoughts during the development of the codes. These reflective notes provided us with evidence regarding why and how decisions were made (Hsieh and Shannon, 2005).

We sorted the codes into categories based on how different codes were related and linked and used the emergent categories to organize and group codes into meaningful pattern. We came up with sixty-seven codes, through inductive analysis. In our first attempt to collapse the codes, ten categories were identified; however the process of refining of our categories continued.

Table 4-2: Present the ten preliminary categories, emerging from sixty-seven codes

Research questions	Categories
How do Filipino parents living in Edmonton perceive PDA for their preschool children?	1. Knowledge
	2. Oral hygiene and diet control rather than PDA
	3. First dental visit
What psychosocial factors influence parental adherence to PDA for their preschool children?	4. Socio-economic inequalities
	5. Perception of psychosocial factors
	6. Priority and motivation
	7. Acculturation
	8. Reach
	9. Self-efficacy perception
	10. Socio-cultural norms

We then developed an analytical conceptual map to help organize the categories into a meaningful structure, after which we devised definitions for each category, subcategory and code. To prepare for reporting the findings, we identified exemplars from the data for each code and category.

The process of repeated refining of the emergent categories continued and the eight categories presented in Table 4.3 replaced the previous identified ten categories.

Table 4-3: Refined eight categories

Research questions	Categories
How do Filipino parents living in Edmonton perceive PDA for their preschool children?	1.Perceptions,
	2. Attitudes
What psychosocial factors influence parental adherence to PDA for their preschool children?	3. Socio-economic inequalities
	4. Dental coverage
	5. Migration challenges
	6. Acculturation
	7. Barriers
	8. Motivation

The final refined categories related to our research questions are presented in Table 4.4

Table 4-4: Final categories

<ul style="list-style-type: none"> • Psychosocial factors
1. Stressors
2. Resources
3. Paradox
<ul style="list-style-type: none"> • Structural barriers (Represent the forth non-psychosocial categories)

4.5 Rigour

We used Guba and Lincoln's (1989) framework of credibility, transferability, confirmability, and dependability for assessing the quality of our research. The following strategies were used in this study to ensure the trustworthiness of our findings (Guba and Lincoln, 1989).

In order to meet the '*credibility*' criteria, we first used open-ended questions to encourage truthful responses from the participants. We also considered our reflexivity, which is a crucial human tool for interpreting data and drawing conclusions through memos (Fetterman, 2010; Higginbottom et al., 2013). We assured the accuracy of data collection by audio-recording and transcribing the interviews, using two individuals to ensure accuracy in the documentation of the data transcriptions. Moreover, and as demanded by focused ethnography when analyzing data, we used verbatim quotations and constant comparison analysis to develop the categories. In addition, we performed a member-check among the participants to provide a credibility perspective of the research participants about the phenomena.

To meet the '*confirmability*' requirements, we searched the negative case analysis of elements of data that contradicted the data pattern, such as perceived discrimination as an immigrant in dental settings in Canada by one participant in contrast with other participants' perceptions of a friendly dental setting environment. In order to search negative cases, we modified interview guide, asking participants for perception of discrimination as an immigrant in dental offices. We also ensured that the findings and interpretations were linked to the data, and that the process of coding, categorizing and developing the conceptual map was done using two independent researchers from different disciplines.

In order to meet the '*dependability*' criteria, in addition to using researcher's journal for writing the memos, a third party (Dr. A.F), from Public Health Food and Nutritional Sciences Discipline, systematically reviewed the entire process of data collection, analysis, results and writing up of the report as an audit trail to ensure a consistent, logical, traceable, and documented process.

We assured the ‘*transferability*’ aspect in this study by thoroughly describing the context of exploring the phenomenon in detail in the Methods, Findings, and Discussion chapters. We provided sufficient information about the researcher, context, participants, and research process systematically (Schwandt, 2001). The context of our study will help the readers to decide whether our findings could reasonably be expected to be relevant to another setting. For instance, the insurance regulations and contextual circumstances that could benefit Filipino families with young children in Alberta might or might not be similar to another setting such as Ontario. In addition, our findings suggest that Filipino parents’ openness to integrating new perceptions about PDA for their children may be related to acculturation. This might be inconsistent with strong traditional beliefs in other community settings such as among African communities or those who are less acculturated to Canadian norms.

4.6 Summary

In this chapter, we outlined a focused ethnography as the appropriate method for my study. To demonstrate methodological congruence, we described how data collection and data analysis procedures were consistent with the focused ethnography approach. We also discussed how the methods met the established criteria for assessing rigour in a qualitative study.

5. Chapter Five: Findings

In this chapter, a review of the participants' demographics, along with salient information on oral hygiene, diet, dental attendance, children's insurance status and participants' recruitment locations, are presented. Detailed information on the study's findings, including theme, categories and sub-categories, is then given, using quotes from the individual interviews and focus groups in italics and quotation marks to support the findings. To respect the privacy of the participants and maintain confidentiality, the participants' real names and initials are not used.

5.1 Description of the participants

Except for the 4 mothers recruited by Multicultural Health Brokers Cooperative, the participants were active members of two well-known Filipino Churches in Edmonton – Southside Pentecostal Assembly, and First Filipino Alliance Church (Table 5.6). Using a demographic survey, we collected data on participants' characteristics to better describe our findings. A total of 18 parents (13 mothers and 5 fathers) participated in our study. The age of the participants ranged from 32 to 45 years, and all participants had a college or higher education level. The participants had migrated to Canada through diverse types of immigration options, time period, and marital statuses. All participants identified themselves as members of the Filipino community in Edmonton, and resided mainly in south and north of Edmonton. Almost two-thirds of participants had an average incomes equal or more than \$5,000 per month. Although \$5,000 is considered a good income, in some cases, we found inconsistency between reported average income and household conditions. This inconsistency could be explained by their potential financial contribution to extended family in the Philippines. In addition, our survey illustrated an average good oral hygiene practice for children, which indicates parental positive oral hygiene attitude among our participants (Table 5.2). However, our findings indicated children's frequent consumption of sugary foods or drinks that demands educational intervention (Table 5.3). When we asked parents about history of dental visit for their children (Table 5.4), two-third of parents confirm their attendance for regular preventive check-up within last 12 months. In contrast, one-third of children aged 2 to 6 years have never been to the dentist and our findings blamed lack of parental knowledge about the professional recommendation of

first dental visit no later than first birthday for parent's attitude of not taking their children to the dentist. Furthermore, except one, all participants had dental insurance including private, governmental, or employer-sponsored plan (Table 5.5). Overall, it seemed that the longer parents had lived in Canada, the more positive attitude they acquired towards PDA. However, as participants expressed in their interviews the insurance values and policies produced some additional barriers or shortage for regularly attending dental visits.

5.2 Emerging themes

Based on the characteristics of the data comprising each category, we grouped the four categories that emerged from the data into an overall psychosocial theme and an independent structural barriers category. Theme, categories, and subcategories are presented in Figures 5.1 and 5.2.

5.2.1 Psychosocial factors

There is a “lack of consensus regarding the definitions and usage of psychosocial concepts in the literature” (Egan et al., 2008, p. 2). In our study, we used psychosocial factors to describe “bridging ‘meso-level’ between individual and social structures and how the social process in the meso-level [in the Filipino setting] may lead to perceptions and psychological process at the individual levels” with regard to PDA (Martikainen et al., 2002, p.2). In the following paragraphs, we describe the three identified psychosocial categories: *stressors*, *resources*, and *paradox*. We also describe their respective sub-categories: *socio-economic inequalities* and *migration challenges*; *acculturation*, *attitudes*, and *motivation*; and *perceptions*, *community supports* and *past dental experience*. *Structural barriers* represent the fourth independent category identified through our inductive analysis, which influences PDA among Filipino parents, based on their particular contexts.

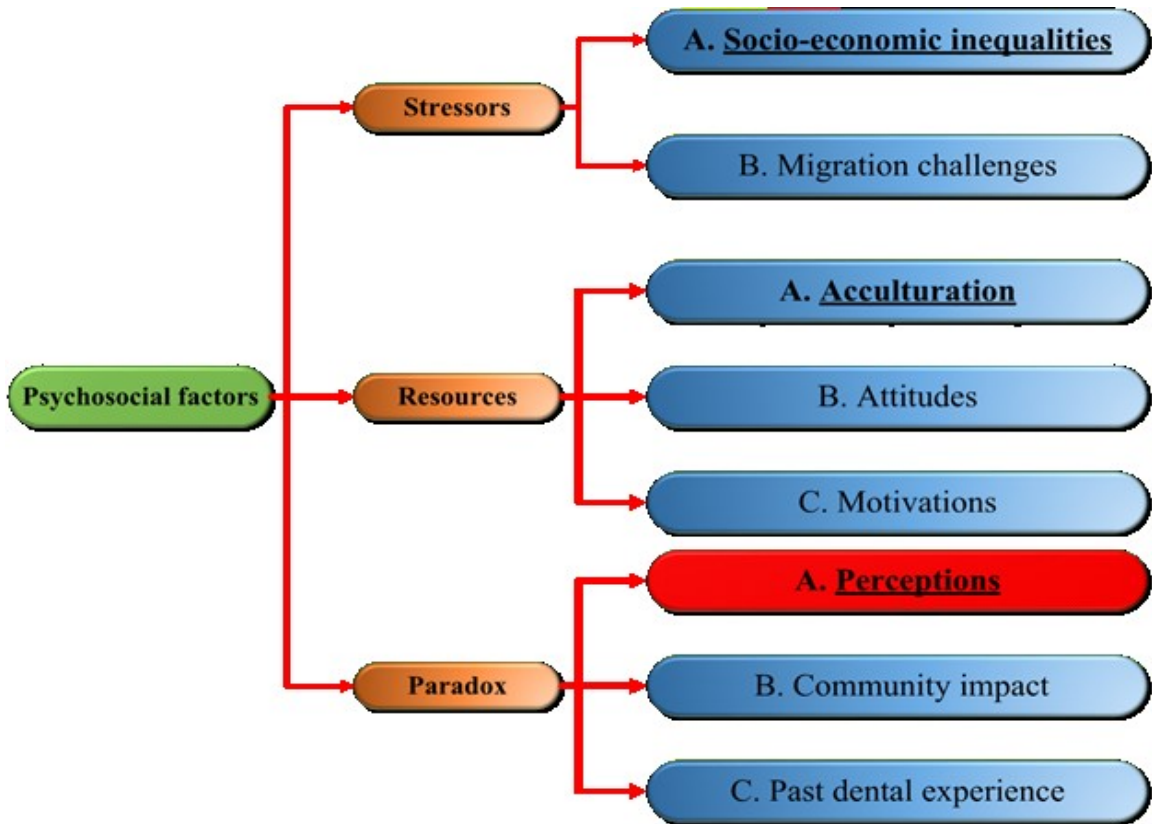


Figure 5-1: Psychosocial Theme, Categories, and Subcategories

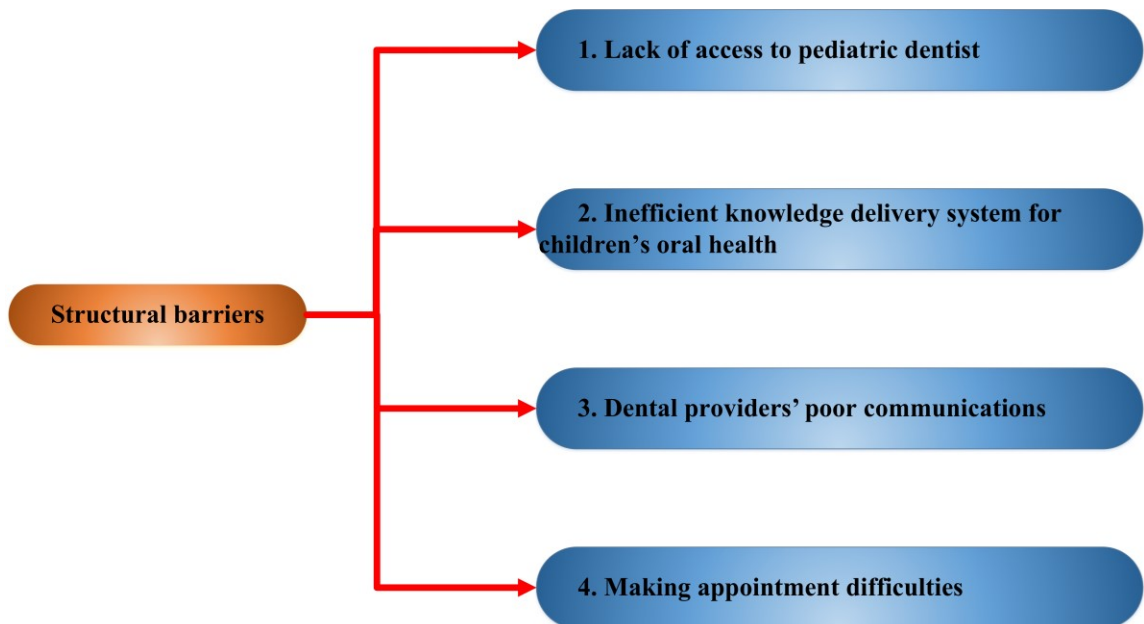


Figure 5-2: Structural Barriers Category and Subcategories

5.3.1.1 Stressors

By *stressors*, we refer to psychosocial factors that negatively affect ?? the Filipino parents' perceptions, experience, beliefs and adherence to PDA for their children. Negative factors identified in our study were either related to socioeconomic inequalities or migration.

A. Socio-economic inequalities

Participants recognized Philippines as a “third-world country with relative deprivation” including access to dental services. When asked about the history of attending dental visits, most participants referred to their limited access to dental services in their home country. Financial hardship made them focus more on basic family needs and survival:

“Philippines is still the third world country, and we have very small budget for emergencies especially for health most people just earn to eat, there is no extra for medical or dentist. [For] the majority of people, the money that they earn is just enough to survive, just for basic needs. Basic needs don't include dental.” (Indi/F/P: 01)

The context of relative deprivation that has been dominant for a long period in the Philippines has induced adoption of different compensatory strategies by the deprived population. These have been customized for different situations, such as strategies implemented by vulnerable people to deal with the cost of addressing oral health issues. Many of the adaptation strategies over time have become accepted as cultural norms in the Filipino context, and the mentality of the people has changed in favor of the adopted strategy as a rationale for subsequent behaviours. Three strategies were expressed by the majority of participants several times: 1) brushing teeth regularly (especially for children); 2) not considering restorative treatments and instead plan for full extraction and full denture, even for young men and women; and 3) visiting a dentist for extractions only when the pain is unbearable.

Parents perceived brushing children's teeth as the first and most affordable home-based strategy to avoid the potential high cost of dental services:

"... because we have a very poor country, we don't go to the dentist, they just do it themselves. For example, they just brush their teeth regularly ... unless they have a cavity, or rotten teeth." (Indi/F/P: 02)

Symptomatic dental visits, mainly because of toothaches that resulted in extraction of the affected tooth was the most commonly used solution for addressing dental problems as compared to more conservative but costly procedures such as restoration and root canals:

"In the Philippines and Thailand where I lived, we just go to the dentist when we have problems. If we don't have any problems, [like] don't see any decay, or toothache, we never see a dentist." (Indi/F/P: 01)

"To save money, instead of crown or filling [teeth], they extract everything and then just put false teeth. It's cheaper, plus with false teeth no pain..." (FG II/M/P: 018)

Having full dentures at a young age seemed to be an accepted practice and a cultural norm in the Philippines:

"In the Philippines, that's your culture, even [for] your kids; if there's a problem it's okay [be]cause later on we're just going to have a false set of teeth (total denture), unlike here, so the culture is different." (FG II/M/P: 016)

While the "cost of dental care" was found to be high in both the Philippines and Canada, some participants believed dental services in the Philippines to be relatively cheaper and more affordable than in Canada. In addition, unlike in Canada, treatments provided in the Philippines are mainly based on patient request, and extraction is usually patient's first choice because of the cost:

“In Canada dentists are charging too much. Just for the cleaning alone you will be charged, like \$800, and then in a year they will do it again, it’s gonna be charged again.” (FG I/M/P: 09)

“The charges for children are just so high; it’s just adding up every single time, like a few of this a few of that, they put mint, and then that’s additional fee ...” (FG I/F/P: 09 & 07)

The high cost of dental care shaped the perception of low-income participants that dental visits, especially the preventive ones, are a “luxury”. Hence, regular dental care is for people in higher classes and is not perceived by parents from lower socioeconomic classes as being a routine practice for their children:

“... going to the dentist regularly is a luxury....you can’t afford doing it. It’s for rich people.” (FG II/F/P: 014)

“Mm. I think that for those people who have money, they would follow two times a year.” (Indi/F/P: 02)

In addition to dental cost, “lack of coverage” was also repeatedly mentioned as a socioeconomic inequality experienced by the participants. The Philippines is a developing country, and a sizeable proportion of the populace has difficulty covering basic daily needs. This is further compounded by the lack of health insurance and governmental welfare in the Philippines, all of which imposes serious deprivations in the general health of the population:

“If you have a health plan, it’s easy to go to the dentist. But if you don’t have a health plan, it’s hard.... Like people who don’t have insurance, how are they going to go to a dentist?” (Indi/F/P: 03)

In some instances, the health insurance hardship continues in Canada as well. Filipino immigrants with temporary worker visas or those who do not work for a big company face the hardship of paying for their own dental care, even in serious cases:

“Aside, my situation makes [dental visit] difficult, because I'm not a real permanent resident yet, so right now I couldn't get anything, like no benefits, I couldn't take them [my girls] to the dentist for free or anything like that.” (Indi/F/P: 01)

“Ya. That's the problem. Not all Filipinos has a health plan. Not everyone here has a health plan. I have a friend, she has a problem with her teeth, she said I cannot live with pain, but the thing is that she doesn't have the money to pay for the dental visit, because she doesn't have a health plan. That's a problem. Right?” (Indi/F/P: 03)

“Because it's so expensive here, right. And then I don't have insurance before when I was single.” (Indi/F/P: 05)

In addition, even participants with health insurance expressed their dissatisfaction with partial insurance with limited visits – twice a year for adults and once a year for children still being unaffordable for paying the uncovered portion. An additional burden for people who possess dental care insurance is the policy of requiring patients to pay bills out-of-pocket and then claiming reimbursement:

“Yes, but sometimes it's easier said [I will visit dentist regularly] than done, because visiting a dentist will cost, it is costly too much; you gonna pay first and then you receive the payment back.” (Indi/M/P: 06)

“Though we have some company coverage for dental, but still it's not enough; it's only for payment for a year, so we need to pay the remaining amount”. (FG I/M/P: 010)

“Cleaning alone, gets you to \$600-\$800; so almost all of your benefits are gone, for one time. So the next [visit] when will be, you don't want to go”.(FG I/F/P: 09)

We found the impact of socio-economic inequalities originating in the home country continued after immigrating to Canada, and caused psychosocial stressors related to accessing dental care.

B. Migration challenges

Challenges such as “social deprivation” (e.g., precarious finances, lower socio-economic status, and scarce spare time) and struggling to satisfy “basic needs” (e.g., shelter, food, and job attendance) during the migration period led to irregular or non-existent dental attendance for 90% of the participants in our study. Moving to Canada can be a stressful and challenging decision for Filipino newcomers, who do so to pursue a better quality of life for their family. When they arrive with a temporary or visitor’s visa (the main way of moving to Canada for Filipino citizens), they prioritize working for financial stability and social integration in their new country.

Having dental insurance through the employers, while helpful, did not seem to be a strong motivator for Filipino families to prioritize regular dental visits when their fundamental goal was to invest their time primarily on achieving a better financial stability in the new country:

“The only thing is, one reason for being here as an immigrant; we have nothing, so we need to work. You know, we have no time for dental things. We don’t prioritize going to dentists; we don’t really put spare time, bringing the kids to the dentist because we keep on working and you know, we keep on earning and paying our bills, and stuff like that. So, visiting dentist, if we want to categorize it, they’re on the bottom rank. So we go first....if you really grade it 1 – 10; dentistry will be settled negative one (-1). (FG I/M/P: 07)

“Ah it’s very seldom that we go to the dentist. Maybe it’s been ... I don’t know how many years that we haven’t been there, because, um.. I do have [like] two fillings on my teeth and after that I didn’t go....um that’s because we’re so busy and we didn’t have time to go there.” (FG I/F/P: 012)

While participants were aware of the importance of dental visits, this practice did not seem to be considered as important as addressing other basic needs such as food and shelter:

“I’m just aware like everyone should visit dentist, but you know that, it’s not the priority. Because it’s just never being the priority.” (Indi/F/P: 01)

“Like even if they don’t have a plan and they have much more [important things to do], you don’t prioritize the oral health of your kids, if it is not necessary.” (Indi/F/P: 01)

Living in rough neighborhoods after migrating to Edmonton was also found as a source of stress for the newcomers who can barely afford finding a place to live in a safe neighborhood because of the financial means.

*“Within and after the interview, I (PB interviewer) repeatedly witnessed the participant’s husband calls for making sure that his wife and two children are in a safe condition. This observation was interesting to me and prompted me to ask, in an informal way, for reason of these calls after the formal interview. The participant explained to me about the several recent robberies that had happened in their neighborhood. She told me that her husband is very concern about their safety when he is at work, but sadly living in a better neighborhood was unaffordable for them yet.” (Researcher’s **memo extract, April 30, 2014**)*

Furthermore, migration imposes “separation and lack of family support” as additional challenges to the newcomers. The majority of Filipino immigrants come from large families with several siblings. The stress caused from separation and losing the family support place them at the risk of emotional instability to the extent that experience severe depression because of separation from their children for a long period of time:

*Before starting the formal interview, participant 02 shared with me her feeling that she suffers because of leaving her two first children back home with parents. She was complaining about both the long legal process of immigration for her children in Canada and the corrupt officials in the Philippines that I identified as a source of stress for a hopeless mother separated from her children for a long time. (Researcher’s **memo extract, April 30, 2014**)*

“Most of our parents are back home, so they have no idea what we do... We have like, no family here.” (FG I/F/P: 07)

“Oh, no. We were alone that time, we were busy working, and I had so many medical issues without support, like I broke my arm, I had three surgeries, so we had other priorities at that time...instead of taking them to the dentist” (Indi/F/P: 01)

“I feel good [about taking my child to dentist], because they let you learn, because I am a mom who has no parents here....Yeah, I don't have relatives here. I don't know what to do. I don't know how to start for the babies, or for my child who was young.” (Indi/F/P: 03)

Community activities and religious beliefs, practices, and gatherings seemed to have a major role in supporting and comforting the newcomers in the absence of their families and friends:

*I found a strong commitment among the Filipinos to the participation in their various religious activities and church worship as a way to compensate for their lack of support and separation from their families and parents following migration to Canada. **(Researcher's memo extract)***

In addition to the challenges that the participants described in their day-to-day lives, they also talked about a *lack of trust in dental providers* in Canada as an additional stressor affecting their adherence:

“When she [dentist] performed an oral check-up and said that he had 5 cavities, I'm not sure if it was really legitimate that it was 5 cavities, because she can't really see it. Because my boy is like: "naanaaanaa", was like closing his mouth, and it was just, you know, a quick look. Then I consulted one of my friends, and then they told me that they [dentists] do that for me, in order to use all my Blue Cross.” (Indi/F/P:02)

The feeling of being judged and discriminated against by the providers because of being an immigrant who would not be able to pay for dental treatments was conveyed by a participant who seemed to be very disappointed:

“Receptionists are very snobbish. I felt that all the time because I felt discriminated. Sometimes, especially as I am a busy person, I would go to the dentist with my kids, I don't comb my hair, I don't dress, why would I put on makeup. I can't, I don't have time right. and they think that I look like... like I couldn't pay...you know, I don't know what's going on in their minds...”
(Indi/F/P:02)

The challenges faced by the newcomers and their coping strategies routinely developed during the migration period did not seem to support PDA practices among Filipino parents.

5.3.1.2 Resources

By *resources*, we refer to psychosocial factors that positively affect (or influence) the Filipino parents' perceptions, experience, beliefs and adherence to PDA for their children. Positive factors identified in our study were related to acculturation, attitudes, and motivations.

A. Acculturation

Participants came from a developing country facing different structural barriers such as old style dentistry, lack of knowledge about primary teeth, and access barriers part of the dominant low socio-economic status and health deprivation of their country of origin:

“Well, knowing that we were born in the 1970's, so we experienced the old style dentistry. Now we came to Canada; we came to the west, and we experience this high technology dentistry. So it is good.” (FG I/M/P: 08)

However, the participants expressed a developing process of accepting the new oral health perceptions and norms after moving to Canada:

“It's acceptable here, in Canada. I mean it's really common for a parent to bring them once a year, to the dentist.” (FG I/F/P: 07)

“Oh yes. Well I've been abroad for a while, so the mentality of just going to the dentist when you have a problem, is not anymore in my system. So

even if they don't have problems, because we cannot see it in [with] our naked eye, but just to make sure that their teeth are healthy, then yeah, I think it is necessary to take them to the doctor.” (Indi/F/P: 01)

“Not to retain it [the tooth]. Because I learned here, that is the difference, I learned here, that if you have pain and the tooth has a hole, you have to do filling first before you take it out, right? But in the Philippines, when I feel pain, I will tell them: "please take it out".”(Indi/F/P: 03)

Shifting from aggressive procedures like extractions to more conservative and preventive treatments, gaining awareness and knowledge about oral health, in general, and primary teeth, in particular, and more positive attitudes towards the benefit of children’s PDA were some of the changes that can be attributed to the changing process.

B. Attitudes

The participants after migration and living in Canada believed that their adherence behaviour to PDA would help them and their children maintain healthy teeth. They were also aware of the link between primary teeth and adult teeth as well as dental health and general health:

“ ... the dentist can clean right and then maybe he can advise us like....stay awake with bottles; Yeah, I know about bottles; can harm their teeth but sometimes it’s hard [to know what should do] if they still want the bottle at night, right. So, dentist can advise us” (FG II/M/P: 014)

Participants perceived the benefits of adherence to PDA to be acquiring knowledge about a healthy mouth, reducing children’s anxiety about dentists and developing child-dentist friendly relationships, detecting problems early, promoting general health and healthy adult teeth for children, and reducing the cost of dental care procedures:

“... it is a good thing to have your kids go to the dentist, I’d say at least once a year, even if there is no problem, because problems are detectable at a

very early stage. It's not like you go to the dentist on an emergency because, by then the problem has ballooned to so much that it's already a serious condition; like [needs] a tooth extraction maybe. I do feel, for me, [that] it is quite necessary to go to the dentist to check, to have the dentist check on the kids' oral condition." (FG I/M/P: 08)

Parents were also aware of the importance of building a trusting relationship between the dentist and their children when the children are very young:

"Yeah, it will help kids trust them. So that when they go to the dentist they will not be afraid specially if they do not have a problem. And it's good for hygiene as well, for their good health." (FG I/f/P: 07)

Participating parents expressed a positive change in their attitudes toward prevention practices for children as a result of living in a new country with different standards:

"... prevention is better than cure, right. You don't have to wait for your kids to cry in pain and bring them to the hospital or bring them to the dentist. [It is] much better if you can treat the problem as early as you can, right. And as much as possible, just like what I told you, earlier....I want their teeth to be all natural, you know. I mean....I want their teeth grow like natural and straight as possible, because to put braces is really expensive, here in Canada, right. I mean even in the Philippines, it's expensive." (Indi/M/P: 06)

"In fact there is a relation there, according to studies, you can have a lot of mouth infection or some [other] diseases because of unclean teeth, right, that [oral cavity] is the passage to your stomach" (Indi/M/P: 06)

Parents living in Canada for a longer period of time seemed to be more receptive to PDA for their children. This finding may indicate an interesting link between acculturation and positively changed attitudes among Filipino parents regarding regularly symptomless dental visits for their children.

C. Motivation

When we explored participants' feeling about dental visits, they mentioned several motives that encourage them to adhere to PDA in Canada compared to their home country.

High quality dental services seemed to have a positive impact on Filipino parents' attitude towards dental visits:

“The procedure itself, here, is straight forward and ah....let's say.....ah, most of the time, it's non-invasive and non- intrusive.” (FG I/M/P:08)

“I was just laughing when you asked [about dentists in the Philippines], because in the Philippines there are 'quack' doctors, as they say... which means they're not licensed dentists” (FG I/F/P:09)

“In Philippines, it's just you go in there and everywhere looks clean, but you're never really sure [if] it's ah.... sanitized” (FG II/F/P: 013)

The presence of skilled and knowledgeable providers in Canada was another motivation for parents to adhere to PDA:

“If I take them to the dentist, they would be checked, [the dentist] tells me what to do to improve my children's oral health, and that would really be helpful.” (Indi/F/P: 02)

“I like [providers] here in Canada more than the providers in the Philippines.” (Indi/F/P: 04)

A friendly environment of dental services in Canada gave parents the willingness to take their children to the dentist:

“[In Canada] dental clinics are very clean and it’s a friendly environment. That’s why we choose their clinic, the dentist ... is very accommodating.” (FG II/F/P: 016)

“I like that they’re....yes, most of the dentists I’ve been to, they have been accommodating and friendly, at least when I’m in front of them, in general.... what I like, the system here....it’s so convenient, making an appointments is so easy. You can do it online, you can do it by phone and in general, compared to our country, it’s more organized here.” (FG I/M/P: 08)

Given Filipinos’ busy lives, referral and reminders seemed to facilitate their access to and the scheduling of appointments:

“I go to my family doctor and they check first if they can attempt, then they will, but sometimes they will send you to a specialist.” (FG I/F/P: 012)

“Every year, they call me for visit ... they are the one who keeps on asking for my availability.” (Indi/M/P: 06)

Community-based dental programs for parents and children provide basic knowledge and screening opportunities for their early arrivals:

“I volunteered in multicultural center, and in one year there were like 2 dental hygienists who went there to explain about dental care and all that.” (Indi/F/P: 01)

“At the McCauley school, there was a dentist there, I believe, she was a dentist. They performed topical application of fluoride for the boys.... they have some programs, you can take the children there for free fluoride application, and it’s covered by the government.” (Indi/F/P: 02)

“It just happened there a parent session in multicultural. So, I had to bring them [twins] both. So that the dentist saw them.” (Indi/F/P: 03)

5.3.1.3 Paradox

By paradox, we refer to emerging categories with the potential capacity of being described under both *stressors* and *resources* themes, based on their context. In the following paragraphs, I describe three paradox subcategories: perceptions, community impacts, and past dental experiences.

A. Perceptions

As a resource, participants had clear ideas about parents' roles and responsibilities in oral health of their young children. They believed in controlled home-based oral hygiene and diet discipline that should be implemented by the parents for their children to prevent dental problems:

“If parents are well-aware of what's going on and they help the children brush their teeth and they check the children's teeth, then any problems can be prevented.” (Indi/F/P: 01)

“Yeah, indeed it's [dental cavity] preventable. Main thing is training your kids how to clean; doing it religiously every day; brushing the teeth. Eating right, you know, before bedtime, never allow them to eat chocolate, definitely. And if they do, they really need to brush their teeth.” (FG I/F/P: 09)

“It is preventable and I can say one factor is the diet. Here, you can choose, you know, healthy foods; healthy drinks.” (FG I/F/P: 08)

In addition to having their children regularly brush their teeth and controlling their children's sugar intake, few parents perceived PDA as another preventive measure.

“Brushing every day, twice a day. Going regularly to the dentist.” (FG II/F/P: 013)

“.... 2 weeks ago we went to Kaye dental clinic for my kids; they said that they have to come regularly at least once in six months.” (Indi/F/P: 01)

“They have to go to the dentist ... for prevention.” (Indi/F/P: 02)

Moreover, parents suggested a connection between their own oral health perceptions and behaviours and their children’s oral health behaviours:

“If they don't see me brush my teeth, why would they brush their teeth....It should always come from the parent as a model. They should always see me brush my teeth, floss my teeth, use the mouthwash, when they're a little bit bigger.” (Indi/F/P: 02)

A negative perception acting as a stressor was that the belief that the first dental visit should be delayed until all baby teeth are in, around two years of age. When focus group participants learned about the American Academy of Pediatric Dentistry recommendation that the first dental visit should occur no later than the first birthday, they seemed to be surprised, and felt that they had been misled by the health care providers:

“We were supposed to [take them to the dentist], but they [dentist] said at two years old children should go to the dentist.” (Indi/F/P: 05)

“Yeah, but this year, our dentist said not yet, because she is just one and a half, so maybe two years old.” (FG II/F/P: 014)

Parents were also disappointed that even pediatricians had not mentioned anything about the need for PDA to them:

“but ah.....they are doctors...they did not recommend us [visiting a dentist], so....he said, like everything is fine!!!” (Indi/M/P: 06)

Another perception seemed to act as a stressor for parents was the lack of control they felt over their children’s oral health behaviours:

“So when you say preventable, maybe it's possible, but for age six, it's too difficult...” (FG I/F/P: 09)

“Yeah, I know about bottles; can harm their teeth but sometimes it’s hard if they still want the bottle at night.” (FG II/F/P: 014)

“It’s not going to be easy work for young children. But when they grow a little bit more and they can understand what’s going on, probably that will be easier.” (Indi/F/P: 02)

Participants also perceived lack of control over adhering to PDA for very young children because of their age, which can be interpreted as a stressor with a negative impact on parental attitudes toward dental visits for very young children:

“I think at some point – three years old, or two and a half....something. Like because of their attention span, they can’t sit still, right.” (FG II/F/P: 014)

B. Community impact

The participants in the two paradox groups expressed different perceptions about *Filipino* dental providers. While some participants saw Filipino dental clinics in Edmonton as a source of stress and a reason for avoiding dental visits. Others considered them as community supports in terms of receiving high quality dental services, ease of payment, and easy access to dental visits:

“Well yeah, it’s in fact, a Filipino dental clinic, operated by a Filipino dentist and all the staffs are Filipino. [Chuckling] The sad thing is, my husband is a little bit more afraid. The secretary is like..... very strict. Group chuckling..... I think we are going to change it [dental clinic].....sorry.” (FG I/F/P: 09)

“In here, no worries because we have a Filipino clinic, and he [the dentist] is very accommodating.... he is our family dentist because it’s accessible to our place and we already know them for a year.” (FG II/F/P: 015)

Different perceptions about Filipino dental providers in Edmonton may indicate the impact of different personal characteristics and respective cognitive expectations that each participant seeks to receive from their Filipino dental providers.

C. Past dental experiences

Past parent-related dental experiences and child-related dental experiences both influenced their oral health behaviours.

Parent-related past dental experience: Past unpleasant dental experiences affected our participants' adherence to PDA for their children as a stressor or resource. In some parents, unpleasant past dental experiences resulted in stress and anxiety, making them avoid dental visit:

“When I get there, I hate the feeling of choking....every time. Light chuckle. It's not the dentist, it's the assistant who's doing the cleaning first.....I feel like I'm choking; I feel like I'm gonna die! So next time, I contemplate because of that feeling....I'm honest.” (FG I/F/P: 09)

“The last time that I had a dentist [visit] the first one, that's back home in Philippines.....and that's my bad experience, because it gave me a trauma – he performed tooth extraction, for nearly six hours.....and so I said....Yeah (chuckling). So from that experience, oh no...I don't want to go to the dentist.” (FG I/M/P: 010)

In contrast, some parents saw their unfortunate past dental experiences and losing their natural teeth as a resource that motivates them to avoid the same experience for their children by adhering to regular dental attendance:

“ ... my wife had nice teeth, but it went to a lot of extractions and ended up with denture, fillings; so based on experience, if we can possible....possibly keep our kids teeth normal as possible, we will try that.” (Indi/M/P: 06)

Child-related past dental experience: The child dental surgery performed under general anesthesia was reported as an unpleasant experience for parents. Two out of fourteen participant families experienced a day surgery treatment for their very young child. Both mothers illustrated an enormous uncertainty and stress following the surgery. While one mother perceived the experience as a resource for her increasing awareness and attention to keeping her child's teeth healthy by adherence to PDA, the other mother considered it as a radical treatment plan for her young son and a source of stress:

"I asked a lot of questions, because they told me that they might put him to sleep, and I'm a bit worried about it... Because the drug that will be giving them to put them to sleep... So I've asked questions... So, I'm not very sure if this is a very good idea" (Indi/F/P: 02)

"My girl had surgery already.....last year...I think they worked on 8 teeth it was so hard because it's so hard to eat. They pulled them out on one day, just by one surgery....I thought.....I'm dying that time when I saw her. Yeah, because you know, it's like.....I felt that.....she's dying because she's asleep." (FG II/F/P: 013)

"We just called and said she is.....and we knew the doctor and that's why we didn't have a problem to make an appointment...[after the surgery]brush everyday, twice a day. Going to, you know, regularly going to the dentist." (FG II/F/P: 013)

5.2.2 Structural Barriers

Analysis of our data illustrated a number of *structural barriers* that precluded adherence to PDA for Filipino children. While not necessarily categorized as psychosocial factors under *stressors* and *resources* categories, these structural barriers are defined in our study as barriers originating from the social and environmental context that influenced parents' adherence to PDA for their children. This category enriched our synthesis. We identified four structural barriers:

lack of access to pediatric dentists, inefficient knowledge delivery system for children's oral health, dental providers' poor communication, and difficulties in setting up appointments:

"I'm gonna book an appointment right away because sometimes it's hard to get an appointment. And I notice here that um...for kids, you can't just go to your family dentist, they have to refer you to a specialist ..." (FG I/F/P: 012)

"I didn't know that the child should go to the dentist before two years old. We thought that if the teeth of the child is okay, then you didn't need to go to the dentist." (Indi/F/P: 02)

"What is that 'fissure sealant'? I: They seal the teeth when you know P: When there is a hole? It is like a filling but like a metal? I: No, no, no. The teeth are free of cavities, but because the baby teeth have very deep grooves ... you know... P: mmhm. Ok. I: The grove will be sealed by a special invisible material to avoid cavity... Ahh!.. I never knew that. They didn't tell us about it." (Indi/F/P:03)

"I don't like them when they do something in your mouth without explaining what they're doing. They just....starting to work, without explaining what are they gonna do." (FG I/F/P: 05)

"Well I'll have to take him to the dentist but the dental clinic told me that they don't do that [treatment for kids] in their clinic". (Indi/F/P:02)

Overall, our findings indicate parents raised in the Philippines lived with long-lasting socio-economic inequality and financial stress led them to face several psychosocial and structural barriers that influenced negatively their attitudes toward PDA. However, migrate to Canada and being exposed to new knowledge, new dental practice for children, and less structural barriers helped them to reinforce positively their attitudes toward PDA.

Table 5-1: Socio-Demographic Characteristics of the Participants and children

ID	Child's age	Included child Sex	Parent	Parent's age	No of children	Children: Born in Canadian	Years in Canada	Type of immigration	Parent's education	Child lives with	Income per month CAD\$
01	5 Y	F	Mother	44	2	No	3 Y	Visitor	University	Mom	2000-3000
02	2 Y	M	Mother	35	2	Yes	5 Y	Economic class *	College	Both parents	>5000
03	4 Y	F	Mother	32	2	Yes	7 Y	Foreign worker	College	Both parents	>5000
04	2 Y	M	Mother	36	2	Yes	7 Y	Economic class	University	Both parents	<1000
05	2 Y	F	Mother	-	1	Yes	8 Y	Economic class	College	Both parents	>5000
06	3 Y	F	Father	39	2	Yes	6 Y	Economic class	University	Both parents	1000-2000
07-A	6 Y	M	Mother	34	2	Yes	8 Y	Family class	University	Both parents	>5000
08-A	6 Y	M	Father	41	2	Yes	8 Y	Family class	University	Both parents	>5000
09-B	3 Y	M	Mother	38	3	Yes	6 Y	Economic class	University	Both parents	4000-5000
10-B	3 Y	F	Father	42	3	Yes	6 Y	Economic class	University	Both parents	4000-5000
011-C	6 Y	M	Mother	43	2	Yes	9 Y	Economic class/caregiver	College	Both parents	3000-4000
012-C	6 Y	M	Father	45	2	Yes	9 Y	Economic class/caregiver	College	Both parents	3000-4000
013	3 Y	M	Mother	35	1	Yes	5 Y	Economic class	University	Both parents	1000-2000
014	6 Y	M	Mother	40	3	No	3 Y	Economic class	University	Both parents	>5000
015	4 Y	F	Mother	43	2	Yes	6 Y	Economic/contract worker *	College	Both parents	>5000
016	3 Y	F	Mother	-	2	yes	2 Y	Economic class	-	-	-
017-D	2 Y	M	Mother	35	1	Yes	6 Y	Economic class	University	Both parents	4000-5000
018-D	2 Y	M	Father	38	1	Yes	6 Y	Economic class	University	Both parents	4000-5000

07-08: Family (A); 09-010: Family (B); 011-012: Family (C); 017-018: Family (D)
 * Self-Identified Temporary Worker

Table 5-2: Oral Hygiene Information of Children

Participants	Child's teeth cleaned by	Who cleans the child's teeth?	frequency of Child's teeth cleaning /day	start age of cleaning the child's teeth	start age of cleaning the teeth by child
01	TB and TP		> twice	1-2 Y	4-6 Y
02	TB, TP, floss	Mother	Twice	1-2 Y	2-4 Y
03	TB, TP	Mother	Once	< 1 Y	2-4 Y
04	TB, TP	Mother	Twice	< 1 Y	N/A
05	TB, TP	Mother	Twice	1-2 Y	N/A
06	TB, TP, floss	Father	Twice	1-2 Y	2-4 Y
07-A	TB, TP, floss	Child	Twice	< 1 Y	2-4 Y
08-A	TB, TP, floss	Child	Twice	< 1 Y	2-4 Y
09-B	TB, TP, floss	Mother	Twice	< 1 Y	2-4 Y
010-B	TB, TP, floss	Mother	Twice	< 1 Y	2-4 Y
011-C	TB, TP, floss	Mother	Twice	< 1 Y	2-4 Y
012-C	TB, TP, floss	Mother	Twice	< 1 Y	2-4 Y
013	TB, TP	Mother	Twice	< 1 Y	2-4 Y
014	TB, TP	Child	Twice	< 1 Y	4-6 Y
015	TB, TP	Child / Mother	Twice	1-2 Y	<2 Y
016	TB, TP	-	> twice	-	-
017-D	TB, TP	Mother	Twice	< 1 Y	N/A
018-D	TB, TP	Father	Twice	< 1 Y	N/A
07-08: Family (A); 09-010:Family (B); 011-012: Family (C); 017-018: Family (D)					
TB: Tooth brush; TP: Tooth paste					

Table 5-3: Diet Characteristics of Children

Participants	Child still bottle-fed or breast-fed?	Child's sugary food or drinks exposure frequency
01	No	More than 3 times/day
02	Yes	More than 3 times/day
03	No	1-3 times/day
04	No	1-3 times/day
05	Yes	1-3 times/day
06	No	More than 3 times/day
07-A	No	More than 3 times/day
08-A	No	More than 3 times/day
09-B	No	1-3 times/day
010-B	No	1-3 times/day
011-C	No	1-3 times/day
012-C	No	1-3 times/day
013	No	More than 3 times/day
014	No	Never
015	Yes	1-3 times/day
016	No	Never
017-D	Yes	1-3 times/day
018-D	Yes	1-3 times/day
07-08: Family (A); 09-010:Family (B); 011-012: Family (C); 017-018: Family (D)		

Table 5-4: Dental Visit Information for Children

Participant	Child's last dental visit	Reason for child's last dental visit	Reason for child not being visited a dentist
01	Within Last 12 months	Non-urgent dental problems	N/A
02	Within Last 12 months	Non-urgent dental problems	N/A
03	Within Last 12 months	Regular check-up	N/A
04	Within Last 12 months	MCHB parent session *	N/A
05	Never	None	Perceived too young
06	Never	Non-urgent dental problems	
07-A	Within Last 12 months	urgent dental problems	N/A
08-A	Within Last 12 months	urgent dental problems	N/A
09-B	Never	None	Perceived too young/Expensive
010-B	Never	None	Perceived too young/Expensive
011-C	Never	None	Child dental anxiety
012-C	Never	None	Child dental anxiety
013	Within Last 12 months	Regular check-up	N/A
014	Within Last 12 months	Regular check-up	N/A
015	Never	None	No access to dentist/ Anxiety/Expensive
016	Within Last 12 months	Regular check-up	N/A
017-D	Within Last 12 months	Regular check-up	N/A
18-D	Within Last 12 months	Regular check-up	N/A
07-08: Family (A); 09-010:Family (B); 011-012: Family (C); 017-018: Family (D)			
MCHB: Multicultural Health			

Table 5-5: Dental Insurance Information for Children

Participant	Insurance/governmental program coverage for child's dental expenses	Type of insurance
01	No	N/A
02	Yes	private plan- 80% coverage
03	Yes	Employer-sponsored plan
04	Yes	Government program for social service
05	Yes	private plan
06	No	Employer-sponsored plan
07-A	Yes	Employer-sponsored plan
08-A	Yes	Employer-sponsored plan
09-B	Yes	Employer-sponsored plan
010-B	Yes	Employer-sponsored plan
011-C	Yes	Employer-sponsored plan
012-C	Yes	Employer-sponsored plan
013	Yes	Employer-sponsored plan
014	Yes	Employer-sponsored plan
015	Yes	Employer-sponsored plan
016	Yes	
017-D	Yes	Employer-sponsored plan
018-D	Yes	Employer-sponsored plan
07-08: Family (A); 09-010:Family (B); 011-012: Family (C); 017-018: Family (D)		

Table 5-6: Participants Recruitment Locations

MCHB-Coop Ltd	01/02/03/04
Edmonton Southside Pentecostal Assembly	05/06/07&08 A/09&010 B/011&012 C
Edmonton First Filipino Alliance Church	013/014/015/016/017&018 D

6. Chapter Six: Discussion and Conclusions

In this chapter, a brief summary of the systematic review's contribution is presented, followed by a description of the limitations we faced in the process of carrying out the study. Our interpretation and synthesis of findings is then discussed and situated in relevant literature. Finally, the chapter closes with a summary of the conclusions.

6.1 Discussion

Given the importance of PDA in early childhood caries prevention, we conducted a systematic review to identify “factors affecting children’s adherence to regular dental attendance.” The systematic review revealed structural, health policy, community, and cultural factors, but we also identified a gap in the conceptualization of psychosocial determinants of children’s adherence to regular dental attendance. This study contributes to filling that gap.

6.2 Limitations of study

This study had some limitations that need to be acknowledged. First, we faced considerable challenges in recruiting participants who satisfied our inclusion criteria. It was especially difficult to set a time that was convenient for at least six parents needed for a focus group, mainly due to their already over-loaded schedules because of working two to three shifts a day. A second limitation was that we were unable to recruit newly-landed Filipino immigrant parents, mostly because of their lack of connections to trusted organizations and their anxiety and uncomfortable feelings about speaking with strangers at the beginning of their migration period. The assistance of the two churches and the Multicultural Health Brokers Co-op was crucial in our recruitment process.

The third limitation of our study was shaped by the lack of recognition among funding agencies the importance of “regular dental attendance” as a preventive oral health measure. At the same time, we also perceived a general adverse response among grant proposal reviewers to the topic of our project (regular dental visits), which reviewers considered PDA as a conflict of interest in favor of financial benefit for dentists.

6.3 Psychosocial factors

The findings of our study offered novel insights that contribute to understanding the psychosocial factors that shape PDA among Filipino parents in Edmonton. The key theme identified in our analyses represents parental oral health perceptions that were predominantly influenced by “Stressors”, “Resources”, and “Paradox” categories. In other words, the findings indicate how the contexts of dominant relative deprivation in the parents’ home country (Philippines) and migration challenges negatively influenced the parents’ oral health perceptions for their children. On the other hand, our findings illustrated how migration to Canada and exposure to new knowledge and practices following migration positively affected Filipino parents’ attitudes and motivational perceptions toward PDA, even though they still encountered some structural barriers in their new country. However, the data from demographic characteristics indicate positive link between the participant’s length of time living in Canada and their shift toward new oral health practices.

6.3.1 Stressors

Cassel (1976) was the first to introduce a link between vulnerability to disease and physical and psychological stress produced from social environments (Cassel, 1976). Based on this finding, contemporary epidemiological trends seek to find explanations that can explain socio-economic inequality in health through psychosocial determinants within individual, intrapersonal, and community contexts (Krieger, 2001).

In applying Cassel’s (1974) concept to our study, we asked study participants about the history of dental visits for themselves. We found that such visits were done exclusively after episodes of pain and extractions, both in childhood and in adulthood back in the Philippines. This finding was consistent across all participants. In our memos, we mentioned that we were looking for a reason for this phenomenon.

All study participants were born and raised in the Philippines before moving to Canada. The Philippines is located in Southeast Asia and has a population of about 100 million people. It is a developing country with deeply entrenched challenges of socio-economic inequality.

According to the National Statistical Coordination Board, in 2005 the earned income of wealthy people in the Philippines was twenty times more than that of poor people. Such a wide gap in income in any society is considered an indicator of other negative social outcomes, such as social relative deprivation and marginalization, which in turn adversely affect the health and wellbeing of the disadvantaged population mediated by chronic psychosocial health-damaging stressors (Kawachi and Kennedy, 1999).

There is bold scientific evidence supporting the link between socio-economic inequalities and the health of disadvantaged populations, including oral health (Armfield et al., 2013; Kawachi and Kennedy, 1999). This evidence, along with a scientific report from the National Oral Health Survey conducted in 2006 in the Philippines, supports our finding of links between socio-economic inequity and low oral health status among our participants. The severity of the results sparked a call-to-action report to address the high prevalence (97.1%) of dental caries among 6-year-old children, and the high prevalence (84.7%) of symptomatic dental infection and pain (Bagramian et al., 2009; Yabao et al., 2005). Furthermore, these reports indicated a dominant proportion of untreated dental decay among 1,200 Filipino schoolchildren aged 6 to 12 (overall prevalence of 92.3%), illustrating a high level of unmet dental treatment needs (Yabao et al., 2005). The above oral health contexts documented in the literature for the Philippines are consistent with the low status of the oral health context experienced by Filipino parents in our study. These parents repeatedly emphasized being raised in poor families with several siblings with incomes enough only for survival, and a context where dental visits were considered a “luxury” for rich people. However, our participants were also consistent in indicating that dental care was always perceived as an important issue by their parents who were careful about cleaning their children’s teeth with available natural or basic tools, such as a cloth or using special plant leaves instead of dental floss to avoid the burden of high dental costs.

Steady financial hardships originating from unequal distribution of wealth, compounded by a lack of welfare support and dental coverage, led Filipino-born parents to adopt a coping preventive strategy for avoiding dental visits that they perceived as expensive and unaffordable. The preventive dental care strategy entailed brushing the children’s teeth, washing their mouth before bedtime, and avoiding a sugary diet as much as possible.

The behavioural intentions of Filipino parents towards PDA could be explained by the Theory of Planned Behaviour constructs, which consist of attitudes, subjective norms, and perceived behaviour control. The Theory of Planned Behaviour's major assumption is that individuals behave rationally based on their psychosocial context and circumstances (Nutbeam et al., 2010). This could explain why evidence on oral health disparity indicates that people of low socio-economic status are less likely to seek dental care, but instead focus on meeting their immediate basic needs (Flaer et al., 2009). However, our findings contradict Flaer and colleague's argument that low socio-economic people have a low regard for the seriousness and susceptibility of dental disease (Flaer et al., 2009). We found that Filipino parents, despite their low socio-economic status, were highly concerned about preventing dental decay in their children, and used elementary procedures within their financial and cultural grasp to address those concerns. This discrepancy could be explained by Garcia and colleagues' study (2008) on the oral health behaviours of immigrants, where they found that the "one-size fits for all" approach is not always effective in multicultural populations. As part of our reflective observation, we noted that despite their socio-economic hardships, Filipino parents are highly disciplined, take firm responsibility for their children, and are open to learning new approaches to resolve problems.

In addition, we found that Filipino parents adopted a secondary strategy when their preventive brushing and cleaning fails. This entails a symptomatic dental visit when the child develops strong pain and infection, and choosing the extraction of decayed teeth (as the cheapest procedure) and replacing them with full or partial denture around age 30. This approach was considered a lifetime investment compared with fillings and root canal therapy. In their perceptions, full dentures are considered a wise investment that prevents further pain or additional costs. A similar strategy of extraction and replacement with dentures as an investment has been found among people with low socio-economic status in Brazil (De Marchi et al., 2012), a developing country with high socio-economic inequality similar to Philippines. Furthermore, a study exploring immigrants' use of dental services in Canada indicates that, among immigrants, dental visits are less likely for preventive check-ups and more likely for accessing dental services that deal with symptomatic dental issues (Newbold and Patel, 2006).

These strategies are examples of the “Health Decision Model”, which conceptualizes factors that lead individuals to make health decisions, such as high cost of treatment or lack of social support (Eraker et al., 1984). The long-term socio-economic inequality challenges of Filipinos along with their long-term relative deprivation conditions result in consecutive practicing of these strategies, generation to generation. As participants stated, they continued to practice these coping strategies, unconsciously adopted as a norm in their home country, after resettlement in Canada.

Our participants moved to Canada with the legacy of learned perceptions of oral health based on contextual norms from their parents, and these learned perceptions were passed on to their own children. The passing on of learned perceptions suggests that the region of origin has a significant influence on use of dental services by this population in Canada (Newbold and Patel, 2006). Perhaps involving the local community workers who are familiar with “pre-migration concepts” would be the most feasible and efficient way to educate newcomers about the standard of care in the host country. The training should then be tailored based on the pre-migration concepts acquired in the original country.

We found priority-setting to be an important concept affecting PDA. The demographic survey indicated that 85% of the study participants migrated to Canada through temporary visas as caregivers, with a priority of converting their temporary visa into permanent residency in order to guarantee a permanent income. To achieve their aim, they dedicated their full time and energy to working seven days a week in order to repay the high cost of immigration and contribute to the financial support of their large extended family back home. This overwhelming investment in work hours translated to a major source of stress for the migrants, which was further compounded by additional stressors such as lack of neighborhood safety, structural barriers to accessing oral healthcare services, new dental care standards, and separation from family and young children left behind in their homeland. All of these combined to relegate preventative dental visits to a position of low priority.

The lack of neighborhood safety, structural barriers to accessing oral healthcare services, new dental care standards are well documented in the literature as common sources of stress among new immigrants (Egan et al., 2008; Scheppers et al., 2006). However, separation of

mothers from their young children and dependent family members, as a result of the recent dynamic of feminized labour migration trends (known as “*migration status and transnational mothering*”) has been highlighted as a new hardship for Filipino mothers with low socio-economic status (Fresnoza-Flot, 2009). Under these circumstances, the mothers could find no rationale for dedicating time and concern for PDA, even for their children.

It is important to note that in contrast to the bold evidence in the literature surrounding recent immigrants’ hardships of finding a job, encountering language barriers, and handling psychological burdens within a new culture, our study showed that those challenges were not representative of the Filipino immigrants’ experience in Canada. This phenomenon could be explained by flexibility in finding a job, high English language skills, and receptivity to Western culture.

6.3.2 Resources

Resources are identified as acting as a buffer to psychosocial stressors. Whereas several psychosocial theories have been developed to explain the causation of stress, Cassel believed in interventions that could promote resources such as social support rather than reduce the exposure to stressors (Krieger, 2001). In the present study, we identified “*acculturation*” as the key theme for the resources category. “*Attitudes*” and “*Motivation*” toward PDA seem to be affected by “*acculturation*” as well. This finding in our study is important, as it contradicts evidence that the acculturation process is a crucial and oftentimes long-lasting stressor among immigrant groups (Egan et al., 2008; Gao and McGrath, 2011; Scheppers et al., 2006; Schwartz et al., 2010).

Migration refers to a starting point for the multidimensional process of change within the new country, new culture, and new norms. The process of changing can last several years or even a lifetime, and is known as “*acculturation*” – a continuous process of contact with dissimilar cultural individuals, groups, and social influences (Gibson, 2001; Schwartz et al., 2010). Acculturation operates on immigrants’ cultural practices, values and identifications as well as the context of receiving societal constraints (Schwartz et al., 2010).

These factors have an important role in identifying a potential link between the acculturation process and psychosocial and health outcomes. Similar to the interactional context introduced by Schwartz and colleagues (2010), we identified a link between the characteristics of Filipino newcomers and their acculturation in Canada including their oral health beliefs and practices, socio-economic status, fluency in English, and available resources. For instance, a comparison between Filipino and Chinese immigrants illustrates some differences with respect to health beliefs and practices. Unlike Chinese immigrants, whose health values strongly rely on traditional beliefs (Dong et al., 2007), we found that Filipino immigrants had no strong attachment to their traditional beliefs and were very open to western cultural values and practices. This characteristic facilitates acculturation.

Another important finding in our study is the participants' ages. The literature on the acculturation process indicates that challenges in adopting a new culture increase with age. For instance, one study on cultural adjustment in the United States compared Asian youth and adults to Asian juniors. It illustrated that there were significantly higher challenges to cultural adjustment for youth and adults than for juniors (Yeh, 2003). However, our study did not arrive at a similar finding. The age of our participants ranged from 32 to 45 years, which is not considered very young, and yet these immigrants seemed very receptive to cultural adjustment.

With respect to our study's objectives, acculturation through acquiring new knowledge seemed to change our participants' attitudes towards oral health in general and preventive dental attendance (PDA) for children in particular. Accordingly, we found that the acculturation process positively influenced participants' perceived parental role. Specifically, it changed their cultural norm from only taking care of the oral hygiene and diet of their children as a preventive measure and extracting the tooth as the remedy to symptomatic dental problems, to being open to PDA and going through day surgery to treat primary teeth. This change can be seen as an effect of acculturated parents' attitudes toward the importance of primary teeth and their relationship with adult teeth. It also shows an acceptance of Canadian cultural values around the importance of preventive dental visits and maintaining primary teeth.

In contrast to several studies and meta-analyses that identified a negative impact of acculturation on the health of immigrants (Egan et al., 2008; Scheppers et al., 2006), the Filipino

parents in our study showed a welcoming attitude towards Canadian oral healthcare services, and were open to adopting taking advantage of dental coverage provided by employers, reminder calls for checkup appointments, higher quality of care, and the referral system. The Canadian dental practices, while dramatically different from what the families were used to in the Philippines, served as motivational resources for parents to adhere to PDA for their children. Scheppers and colleagues' (2006) support our finding that low-level acculturation is considered a barrier to, whereas high-level acculturation is a powerful predictor of, the intention of long-term use of health services among ethnic minorities (McCormick et al., 1996; Scheppers et al., 2006).

6.3.3 Paradox

We identified concepts such as “*past dental experience*”, “*community impact*”, and “*perceptions*” that could have dichotomized manifestations as stressors or resources based on contextual circumstances. Within them, we found “*Perceptions*” as the key theme of the “*Paradox*” category. Perception has a dynamic characteristic that is subject to change according to contextual circumstances. Our study reveals a good example of how perception illustrated a dynamic manifestation towards preventive regular dental attendance starting from life before migration, resettlement, and within the process of acculturation, influenced by new knowledge and new practices. The long-lasting socio-economic inequalities context back home led Filipino parents to perceive asymptomatic dental visits as being low priority, despite their desire for keeping their children’s teeth healthy. In addition, challenges faced by parents immediately after resettlement in Canada negatively influenced their perceived need for PDA. In contrast, after exposure to new knowledge, a new awareness of the consequences of neglecting oral health of baby teeth emerged when length of time since migration (e.g., more than 5 years). This new knowledge-based awareness was shown to positively influence Filipino parents’ attitudes, motivation, and self-confidence towards PDA for their children. A study conducted in Montreal among highly educated Chinese immigrants revealed that traditional beliefs coexisted with scientific dental knowledge (Dong et al., 2007). Unlike our study participants, the Montreal study indicated enduring strong traditional beliefs among their participants concerning oral health, which continued to influence their attitudes and perceptions towards dental care and professionals services long after their arrival in Canada (Dong et al., 2007).

This study hints at the importance of dental providers' cultural competency skills of being informed how is perceived oral diseases by different ethnic groups for providing better dental services for immigrant patients.

6.4 Structural barriers

Our inductive analysis allowed us to identify a “*Structural barriers*” category parallel to psychosocial categories. Even with the best oral health attitudes and perceptions, a positive change to PDA cannot occur in the face of structural impediments. In our study, we identified three structural barriers, which are well supported by a review of evidence regarding potential challenges faced by minorities in the use of health services (Scheppers et al., 2006). Some well-documented structural barriers are dental providers' poor communication skills and difficulties around making appointments for adults and children (Scheppers et al., 2006), but we also identified “*inefficient knowledge delivery system for children's oral health*”, including parental lack of knowledge about the timing of first dental visits and lack of awareness about fissure sealant preventive techniques as additional important structural barriers.

6.5 Recommendations

The goal of our study was to identify the influence of psychosocial factors on Filipino parents regarding PDA for their children in order to promote the oral health of the children in this community. Our findings highlighted the key concept of oral health perceptions that were negatively influenced by relative deprivation prior to migration and positively influenced by new knowledge and practices after migration.

Our project was the first to explore PDA with Filipino parents. A potential direction for future research is developing a dental survey based on what we learned from the present study to conduct a quantitative study with a larger sample size. The survey should be based on the themes, categories and subcategories that emerged from our analyses, especially the oral health perceptions mediated by the acculturation process in the Edmonton Filipino community. The results of a quantitative survey, in addition to the qualitative findings presented in this study, can

be used to inform design of community-based interventions to improve PDA among Filipino newcomers.

Our interview guide was inspired by the theory of planned behavior. *Subjective norm* is an important component of this theory that stresses the importance of an individual's beliefs about what other people think that she/he should do. Insofar as we identified acculturation as an influence on oral health perceptions of parents, a potential theoretical implication of our study is the possibility of integrating acculturation as an important element of the Theory of Planned Behaviour when used for immigrant populations. This proposal warrants further exploration.

Based on our findings, it appears that Filipino parents develop positive attitude towards PDA through process of change in the new country. In addition, our findings revealed a strong connection between community and churches, as well as community organizations such as the Multicultural Health Brokers Coop and Filipino dental services. If so, as an implication of our findings for practice, we recommend developing and implementing oral health promotion interventions in collaboration with such community organizations as important resources for developing oral health capacity for children in the community. This strategy would address the time restrictions that Filipino parents have in accessing dental care because of their busy lives.

Knowledge translation and dissemination of our study can be accomplished through presenting our findings in diverse national and international conferences, and publications in high-impact international journals. We can also present our findings to the organizations and individuals who contributed to our project, such as the Filipino churches and study participants. Presentation of the findings will facilitate the involvement of community members in translating the new knowledge to a community-based action. In addition, short-term and long-term evaluation of oral health promotion strategies in the community would assist in promoting further interventions.

Finally, our findings demonstrated that, unlike some other immigrant communities, Filipino parents positively embrace new norms regarding oral health of children. Therefore, an implication of our findings for policy could be a shift away from a "one-size-fits-all" policy to

adopting health policies that consider differences, such as developing customized regulations tailored for different groups of immigrants based on their strength and weaknesses.

6.6 Conclusions

In Chapter Two, our systematic review highlighted the lack of a solid conceptualization for identifying psychosocial factors affecting PDA; this study contributed to filling that gap. Our focused ethnography illustrated that, in the absence of supportive social or governmental resources in their home country, parents raised in the Philippines moved to Canada with inherited attitudes and perceptions. They viewed symptomatic dental visits as a financial coping strategy against long-lasting socio-economic inequality and financial stress. As our study revealed, being exposed to new knowledge and practices through acculturation played an important role in converting parental perceptions and attitudes towards regular dental attendance in the Filipino community. However, we consider this change to be like a pendulum moving back and forth between oral health care norms and practices before migration to Canada, and newly-adopted practices after migration. In addition, we highlighted the special influence of churches and community organizations connected to the Filipino community as strong resources of social support for the community. These resources should be considered as important venues for the planning and implementation of future oral health promotion initiatives for Filipino newcomers. Other resources, while helpful, are far less effective compared to churches and church-related organizations. However, still we suggest reinforcing efficient social assistance programs to tackle structural barriers such as high cost of dental services for new immigrants.

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Appendices

APPENDIX 1: Ethics Approval

<https://remo.ualberta.ca/REMO/Doc/0/B0621TSJEEJ47C5N33CQUG2L92/fromString.html> 1/1

Notification of Approval

Date: February 28, 2014

Study ID: Pro00045076

Principal Investigator: Parvaneh Badri

Study Supervisor: Maryam Sharifzadeh-Amin

Study Title: Psychosocial determinants of adherence to preventive dental attendance for preschool children among Filipino immigrants in Edmonton.

Approval Expiry Date: February 27, 2015

Approved	Approval Date	Approved Document
Consent	28/02/2014	Consent Form. Revised. Feb 19, 2014.docx
Form:	28/02/2014	Information Document. Clean Version. Feb 19 2014.docx

Thank you for submitting the above study to the Research Ethics Board 1. Your application has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Research Ethics Board does not encompass authorization to access the staff, students, facilities or resources of local institutions for the purposes of the research.

Sincerely,

William Dunn, PhD

Chair, Research Ethics Board 1

Note: This correspondence includes an electronic signature (validation and approval via an online system).

APPENDIX 2: Support Letter & Memorandum of Understanding

Support Letter & Memorandum of Understanding

This letter is in support of the research project: Oral health status and psychosocial determinants of adherence to preventive dental attendance for preschool children among Filipino immigrants in Edmonton.

By this, the Filipino Christian Fellowship (FCF) stating its commitment to support the research project by undertaking the activities below. This letter will also formalize the partnership between FCF and Division of pediatric Dentistry (DPD).

Based on the partnership agreement FCF:

- Will identify one or two community workers who agree to assist with the research project.
- Community workers will:
 - Identify and recruit eligible families,
 - Obtain parents' consents, o organize a time and place for focus groups and dental events -
 - Help with data collection through focus groups and questionnaires and provide interpretation to those who have limited English skills.
 - Provide insights about research methods and findings throughout the project.

Obtained data will be remained confidential by both parties and will be used only for the purposes stated in the research protocol. Data will be processed, analyzed, and stored at the University of Alberta. No identifiers will be disclosed in any reports produced and published based on the data. The University of Alberta will be the owner of the data and FCF will be acknowledged in all the reports and presentations.

Division of Pediatric Dentistry (DPD):

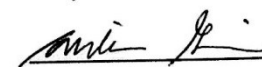
- Will present the main features of the research project to the community workers and the FCF meeting.
- Will provide the FCF with the research protocol and the ethical approval of the research project obtained from the University of Alberta Research Ethics Board.
- Will apply for funding to support the research.
- Will train community workers in conducting the focus groups and research questionnaires.
- Will pay the community workers who help with data collection at a rate of \$25/ hour. The community workers will be responsible for organizing the focus groups and community events in conjunction with the graduate student and will be paid according to the number of hours per

activity specified in the research budget. The community workers will report to the DPD the exact number of worked hours in the final invoice.

- Will provide free dental examinations for children aged 2-6 years old from the Filipino community whose parents have lived in Canada for less than 10 years and agree to participate in this project.
- Will admit children who are in need of dental treatments in the University pediatric dental clinic and will provide the basic dental treatments for participating children free of charge.
- Will assist the FCF in generating further projects intended at improving the oral and general health of immigrant children. The contribution of the researcher of the Division of Pediatric Dentistry will depend on the nature of the project and the health situation under consideration.

Date June 16, 2014

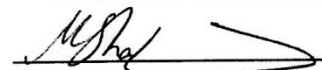
Filipino Christian Fellowship



Nemesia Tuastamban

President

Division of Pediatric Dentistry



Dr. Maryam Amin

Associate Professor and Division Head

Pediatric Dentistry, University of Alberta

APPENDIX 3: Information sheet



INFORMATION SHEET

Title of Research Project: Psychosocial determinants of adherence to preventive dental attendance for preschool children among Filipino immigrants in Edmonton.

Graduate Student:

Students' name: Parvaneh Bari

University of Alberta

Email: badri@ualberta.ca

Supervisor:

Maryam Sharifzadeh Amin, PhD

University of Alberta

Phone: 780-492-7354

Email: maryam.amin@ualberta.ca

Purpose:

The objective of this project is to provide better understanding of psychosocial factors of parental adherence to preventive dental attendance (PDA) among Filipino immigrants for their preschool children.

Methods:

You will be interviewed for approximately 60 to 90 minutes. The interview and focus groups will be audio recorded and transcribed by the student.

Voluntary Participation

You have the right to refuse this invitation to participate or to refuse to answer any of the questions asked during the interview. You are also free to stop the interview at any time or request that we withdraw your information (transcripts, audio recording) up until the end of the day of the interview.

Confidentiality

The information gathered during the interviews will be used for class purposes only. No one will see your transcript other than the student and possibly the course instructor. Your name will not be used when the student presents his/her work to the class.

Analysis

Audio recordings will be typed into transcript format, removing all identifying information. Transcripts and audio recordings will be destroyed by July 30, 2018 by the student.

Benefits:

This study may or may not have any direct benefits for you.

Risks:

It is not expected that being in this study will harm you. However, if you would like to speak to someone after the interview, you may contact either the student or supervisor identified above.

Withdrawal from the study:

If you chose to withdraw from the study, the audio tape and any transcripts that have been made will be destroyed immediately. You are free to withdraw up until the end of the third day of your interview.

Use of your Information:

The interview will be recorded, transcribed and analyzed. The student will present some general themes in the thesis, but your name will not be used in the presentation.

Thank you very much for taking part in this study.

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

APPENDIX 4: Consent Form



University of Alberta

CONSENT FORM

Title of Research Project: Psychosocial determinants of adherence to preventive dental attendance for preschool children among Filipino immigrants in Edmonton

Graduate Student:

Students' name: Parvaneh Badri

University of Alberta

Email: badri@ualberta.ca

Supervisor:

Maryam Sharifzadeh Amin, PhD

University of Alberta

Phone: 780-492-7354

Email: maryam.amin@ualberta.ca

Please circle your answers:

Do you understand that you have been asked to be in a project research study? Yes No

Have you read and received the Information Sheet? Yes No

Do you understand the benefits and risks involved in taking part in this study? Yes No

Have you had an opportunity to ask questions and discuss this study? Yes No

Do you understand that you can quit taking part at any point during the interview? Yes No

Do you understand that you can withdraw at any time during the data collection

part of the study and that any comments that you provided up to that point

will not be used? Yes No

Has confidentiality been explained to you? Yes No

Do you understand who will have access to the data collected? Yes No

Do you know that the information that you provide will be used for oral health project and then destroyed? Yes No

Do you understand that the interviews will be audio-recorded and transcribed? Yes No

Do you understand that you have up until the end of the third day after your interview to withdraw what you have shared in the interview or focus group? Yes No

If you have further questions regarding the research, please contact the student listed above.

This study was explained to me by: _____

I agree to take part in this study.

Signature of Research Participant

Date (dd/mm/yyyy)

Printed name

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

APPENDIX 5: Professional Transcriber Confidentiality Agreement

Confidentiality Agreement for Transcription Services

I, Donna M. Smart, transcriptionist, agree to maintain full confidentiality in regards to any and all audio/video files and documentation received from Parvaneh Badri of the University of Alberta, Edmonton, Alberta

Furthermore, I agree:

1. To hold in strictest confidence the identification of any individual that may be inadvertently revealed during the transcription of audio/video-recorded files, or in any associated documents;
2. To not make copies of any audio/video-recordings or computerized files of the transcribed texts, unless specifically requested to do so by Parvaneh Badri, of the University of Alberta.
3. To store all files and materials in a safe, secure location as long as they are in my possession;
4. To return all files and related documents (if required) to Parvaneh Badri, of the University of Alberta in a complete and timely manner.
5. To delete all related electronic files and documents from my computer hard drive and any backup devices.

I am aware that I can be held legally liable for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio/video files and/or files to which I will have access.

Transcriber's name (printed) Donna M. Smart, Dartmouth, Nova Scotia

Transcriber's signature Donna M. Smart

Date: August 9, 2014

Company name (printed) _____

Principal's signature _____

Date _____

APPENDIX 6: Interview Guide

1. Have you ever been to a dental office before? If yes, tell me about your experience. What did you like? What did you dislike? Why? If you haven't been to a dental office, tell me why you haven't.
2. Tell me about dental care in your home country? How different is it from dental care in Canada? How often do people see a dentist? Is dental care covered in your home country?
3. How often should people go to a dental office? Why? How often do you go to see your dentist? Do you have a family dentist?
4. What do you do when your child has a dental problem?
5. Do you think dental diseases in children are preventable? Why? How can you prevent your children from getting cavities?
6. How do you feel about taking your child to a dentist, when the child has no dental problem? What benefits would you and your child get from seeing a dentist on a regular basis (for instance, for a check-up)?
7. Do you think taking your child to a dentist would help with prevention of disease?
8. In your home country, how often are children taken to a dentist?
9. Since moving to Canada, how often do you take your child to the dentist? Is it more or less frequently? Why?
10. How about your friends and family? When do they take their children to the dentist?
11. What do you think about a dental check-up twice a year for your child?
12. How does your husband/wife/mother/mother-in-law feel about it?
13. How comfortable do you feel in making an appointment to take your child to a dentist?
14. How does your child feel about going to a dentist?
15. What difficulties would you anticipate? How would you handle them? What supports do you need?

APPENDIX 7: Demographic Information

6.6.1.1.1.1.1.1 Demographic Information

1. Youngest child's date of birth: dd/mm/yyyy 2. Gender: boy girl
3. Your relation to child: Mother Father
4. Your date of birth: dd/mm/yyyy
5. How many child (ren) is/are in your care? one two Three Four or more
6. Was your child born in Canada? No Yes
7. When did you move to Canada? Yyyy
8. Did you come to Canada as?
- Refugee Family class Economic class (skilled worker or business immigrants)
9. What is your level of education?
- Grade 9 & under High school College or Trade University degree
10. Is your child living with? Both parents Single parent Other (please specify)
11. What is your household income level **per month**?
- under \$1,000 \$1,000-\$2,000 \$2,000-\$3,000 \$3,000-\$4,000 \$4,000-\$5,000 over \$5,000

Dental information

- 12- How are your child's teeth being cleaned? (*check one*)
- toothbrush toothbrush and toothpaste toothbrush, toothpaste and floss others _____
- 13- Who mostly cleans your child's teeth? child mother father grandmother
- 14- How many times a day are your child's teeth cleaned?
- less than once a day once twice more than twice
- 15- When did you start cleaning your child's teeth?
- before age 1 age 1-2 age 2-3 age 3-4 after age 4
- 16- When did your child start cleaning his/her own teeth?
- before age 2 age 2-4 age 4-6 after age 6 No applicable

17- Is your child still bottle-fed or breast-fed? Yes No

18. How often does your child consume foods or drinks high in sugar?

- frequently (more than 3 times a day between the meals)
 occasionally (1 to 3 times a day either between or with the meals)
 never (less than once a day and only with the meals)

19- When was your child's last dental visit? within the last 12 months over one year
 never had one

20- If your child has visited a dentist, what was (were) the reason(s)? (check all that apply)

- regular check-up non-urgent dental problems urgent dental problems
 others (please specify)

21- If our child has **not** visited a dentist, what were the reasons? (check all that apply)

- My child never had a dental problem My child is too young for a dental visit
 I couldn't find a dentist for my child Dental treatment is too expensive
 My child is afraid of dental treatment from the dental office I am afraid that my child may get other diseases
 I am afraid of receiving unnecessary dental treatments for my child
 Others (please specify).....

22- Do you have insurance or a government program for your child that covers all or part of his/her dental expenses?

- Yes No Don't know

23- If yes, is it... (Mark all that apply)

- an employer-sponsored plan? a provincial program for children or seniors?
 a private plan? a government program for social service (welfare) clients?
 a government program for First Nations and Inuit?