

Research Article

Impact of an Oral Health Education Workshop on Parents' Oral Health Knowledge, Attitude, and Perceived Behavioral Control among African Immigrants

Maryam Amin,¹ Pawan Nyachhyon,¹ Maryam Elyasi,¹ and Muhammed Al-Nuaimi²

¹ Division of Pediatric Dentistry, University of Alberta, 5-513 Edmonton Clinic Health Academy, 11405-87 Avenue NW, 5th Floor, Edmonton, AB, Canada T6G 1C9

² University of Alberta, 5-095 Edmonton Clinic Health Academy, 11405-87 Avenue NW, 5th Floor, Edmonton, AB, Canada T6G 1C9

Correspondence should be addressed to Maryam Amin; maryam.amin@ualberta.ca

Received 10 April 2014; Accepted 4 June 2014; Published 23 June 2014

Academic Editor: Mitsuhiro Ohshima

Copyright © 2014 Maryam Amin et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Purpose. To evaluate the impact of an educational workshop on parental knowledge, attitude, and perceived behavioral control regarding their child's oral health. **Materials and Methods.** A one-time oral health education workshop including audio/visual and hands-on components was conducted by a trained dentist and bilingual community workers in community locations. Participants were African parents of children who had lived in Canada for less than ten years. The impact of the workshop was evaluated by a questionnaire developed based on the theory of planned behavior. **Results.** A total of 105 parents participated in this study. Participants were mainly mothers (mean age 35.03 ± 5.4 years) who came to Canada as refugee (77.1%) and had below high school education (70%). Paired *t*-test showed a significant difference in participants' knowledge of caries, preventive measures, and benefits of regular dental visits after the workshop (P value < 0.05). A significant improvement was also found in parental attitudes toward preventive measures and their perceived behavioral control ($P < 0.05$). Parents' intention to take their child to a dentist within six months significantly altered after the workshop (P value < 0.05). **Conclusions.** A one-time hands-on training was effective in improving parental knowledge, attitude, perceived behavioral control, and intention with respect to their child's oral health and preventive dental visits in African immigrants.

1. Introduction

Newcomers in Canada have been recognized to be at higher risk for dental disease and many other health problems at large [1]. With regard to dental health, lack of dental insurance was found to play a big role in the high prevalence of dental disease in this population [1]. However, even for those who had dental coverage through a governmental health benefit program, the underutilization of dental services for younger children has been very common especially the preventive services [2]. Low dental attendance may stem from the trending belief of immigrant families that professional care is needed only when a dental problem arises, rather than seeking out preventive measures [1–4]. Preventive health behaviors have been frequently identified as having the potential to reduce mortality and morbidity

during childhood [5]. Therefore, measures need to be taken to enhance the understanding of dental diseases and the importance of prevention among recent immigrants.

In Canada, African newcomers often face more settlement challenges than any other ethnic minorities maybe because of their particular health beliefs, values, and practices [6, 7]. A high prevalence of dental caries and a low rate of dental visits were reported among African immigrants' children [8]. Indeed, comparable to other health conditions, poor oral health status has been observed among African immigrants, especially newcomer families [7, 8].

There are many ways to bring awareness and communicate knowledge to the public such as information pamphlets, individual letters, television campaigns, public workshops, and presentations [9, 10]. Each method has some advantages and disadvantages. With respect to recent immigrants,

language and health literacy are two recognized barriers that would limit the impact of many existing dental education programs [9]. A community-oriented approach in the form of an interactive audio/visual workshop has been proven to be more successful than other traditional resources [11, 12].

Theory-based educational programs have been proven to be more effective than non-theory-driven programs [13]. A widely used social cognition model is the theory of planned behavior (TPB) [14]. This theory suggests that behavior is predicted by intention to perform the behavior and also by perceived behavioral control when behavior is not under complete volitional control. Intention to perform the behavior is determined by three factors: (1) attitude towards the behavior; (2) subjective norm (perceived pressure from the significant others to perform or not to perform the behavior); and (3) perceived behavioral control (perception of the extent to which the behavior is within one's control measured in terms of self-efficacy and controllability in relation to the behavior). Taking into account the concept of the TPB, persuasive communication techniques can be developed and used in order to change cognitions often associated with certain behaviors [13]. Therefore, this theory is considered as an appropriate framework for planning behavioral change interventions [15].

Aström and Kiwanuka used the TPB measures to investigate change in sugar snacking, tooth brushing, and oral health knowledge in primary school students following a combined atraumatic restorative treatment and an oral health education program [16]. They found that the combined interventional program improved students' level of knowledge, attitudes toward sugar restraint, and tooth brushing frequency [16]. The TPB measures also significantly predicted parental intention to reduce sugar intake and the occurrence of this behavior in their preschoolers [16]. Yet, there is a need to illustrate how the TPB constructs can be applied effectively in oral health intervention programs.

The purpose of this study was to assess the impact of an oral health educational workshop on parental knowledge about children's oral health and regular dental visits as well as their attitudes and perceived behavioral control toward preventive dental visits. We hypothesized that a theory-driven intervention aiming to improve parents' knowledge about prevention and their feeling and attitudes toward the importance of children's oral health and preventive dental visits, and their perceived behavioral control can significantly enhance their intention to take their child to the dentist in a foreseeable future.

2. Materials and Methods

An intervention was designed to enhance parents' motivations to engage in preventive practices including improving children's dental attendance and was based on a qualitative work previously conducted by Amin and Perez [17]. The intervention was in a form of a three-hour oral health education workshop involving a series of PowerPoint slides emphasizing the importance of oral health in general and baby teeth in particular. Some general information about the causes and consequences of early childhood caries (ECC)

and preventive measures were also included. This was mostly achieved via visual images, videos, and texts incorporated in the PowerPoint slides and also included other materials, for example, worksheets and hands-on demonstrations, all of which were designed to be interactive where possible to engage participants and encourage discussion.

Participants were African parents of young children who had lived in Canada for less than ten years. Bilingual trained community workers identified and recruited the eligible participants and helped with the interpretation of the content of the workshop and administration of the questionnaires. The workshops were conducted in different community locations by a trained dentist who was involved in all aspects of the research process including the design phase and had been briefed to deliver the intervention in a standardized way. The impact of the workshop was evaluated using a pre- and a postintervention questionnaire developed based on the theory of planned behavior.

The primary outcome measure was parents' intention to take their child to the dentist within the next six months. Secondary outcome measures included both affective and instrumental versions of knowledge, attitude, and perceived behavioral control. The measure of subjective norm was not explored in the questionnaire as it was not designed to be a focus of the intervention. Parental knowledge about the identification, causes, and progression of dental decay as well as benefits of regular dental visits was measured by a scale of 1 to 30, with the higher score indicating more knowledgeable parent. Parental attitudes toward the importance of primary teeth, regular dental visits, and dentist's role in prevention of tooth decay were also assessed using a 1 to 10 score, with the higher score indicating a more positive attitude. Perceived behavioral control over taking a child to the dentist for prevention of dental decay in children was assessed using a scale of 1 to 6, with the higher score presenting more perceived control. The intention to take a child to the dentist was assessed by asking the question "how likely it is for you to take your child to a dentist within the next six months." The responses were "unlikely, somewhat likely, and very likely" and scored 0, 1, and 2, respectively.

2.1. Data Analysis. Descriptive statistics were obtained; frequency distribution was calculated and pre- and posttest means and standard deviation of each outcome measure were computed. The data were analyzed using the statistical package for social science 20.0 (SPSS 20.0, Inc., Chicago, IL). Paired *t*-test was used to compare the pre- and posttest mean score of individual outcomes. Correlation analysis was performed to determine the sociodemographic impact on intention of regular dental visit. Statistical significance was tested at the conventional level of $P = 0.05$.

3. Results and Discussion

3.1. Results. In total, 105 African origin parents (90% mothers and 10% fathers) participated in our study. 10 workshops were conducted comprising 10 to 12 parents in each workshop. Intervention was in a form of a half-day session of oral health education including three-hour interactive discussion

TABLE 1: Sociodemographic characteristics of the participants.

Characteristics	Frequency* (%)
Family structure	
Single parent	56 (53.3%)
Both parents	41 (39.0%)
Immigration status	
Refugee	81 (77.1%)
Family class	13 (12.4%)
Economic class	8 (7.6%)
Number of children/family	
One	27 (25.7%)
Two	24 (22.9%)
Three and more	52 (49.5%)
Mother's level of education	
High school or under	74 (70.5%)
Postsecondary or above	26 (24.8%)
Monthly income level	
<\$2,000	41 (39.0%)
\$2,000–\$4,000	51 (48.5%)
>\$4,000	5 (4.8%)
Mother's age (year)	
Mean	35.03 (SD \pm 5.02)
Range	22 to 46
Child's birth place	
Canada	54 (51.4%)
Outside of Canada	48 (45.7%)
Child's dental insurance	
Has insurance	55 (52.4%)
No insurance	47 (40.5%)
Child's dental visit	
Never had dental visit	33 (31.4%)
Over one year	22 (21.0%)
Within the last 12 months	46 (43.8%)

*percentage total not equal to 100 owing to non-response.

plus administration of pre- and posttest questionnaires. More than half of the parents (53.3%) were originally from Somalia and the rest were from Ethiopia, Eritrea, and Oromo communities. About 77% of the families came to Canada as refugee, 49.5% had three or more children, 70% had less than completed high school education, and 39% reported a monthly household income of less than \$2,000. Thirty-nine percent of the participants were single parents. About 52% of the children were reported to have dental insurance either through a government-funded program or employer sponsored dental insurance. However, 31% of the children never had a dental visit. The sociodemographic characteristics of the participants are presented in Table 1.

When the matched pre- and posttests were compared, a significant improvement was found in parental knowledge after the workshop (P value < 0.05). The pretest knowledge scores ranged from 3 to 21 whereas the posttest scores ranged from 8 to 30. The mean knowledge scores significantly increased after the workshop ($t = -14.7$, $df = 104$,

and $P < 0.05$) (Table 2). While 88.6% of the participants received a higher score after the workshop, the posttest score remained the same for 4.7% and went down in 6.6% participants. The knowledge of benefit of regular dental visits increased from 45.5% to 91.7% after the workshop; however, no significant change was found in the number of participants who identified sugary food and drinks as the cause of dental decay. Increased posttest score reflect the parents' improved understanding of early childhood caries. There was also a significant increase in the posttest attitude mean compared with the pretest ($t = -4.8$, $df = 104$, and $P < 0.05$); 46.7% of the participants had a higher score in the posttest, 39.0% had the same, and 14.3% had a lower score after the workshop. About 85% of the participant in the posttest agreed that children should visit a dentist for checkup once a year and 90% acknowledged dentist's role in prevention of oral diseases as compared to 68% and 69% in the pretest.

The perceived behavioral control mean score significantly increased after the workshop ($t = -5.0$, $df = 104$, and $P < 0.05$). While a positive change was found for 64.7% of the participants, the attitude score remained the same for 23.8% and reversed in 11.4%. About 23% of parents in the pretest indicated that they did not feel comfortable to take their child to the dentist; however, in the posttest, only 3.8% still felt uncomfortable taking their child to the dentist. Parents' intention to take their child to the dentist within 6 months was significantly improved after the workshop (P value < 0.05). About 75% of the participants indicated that they take their child for a dental checkup within 6 months in the posttest as compared to 38% in the pretest.

Parents' intention was significantly associated with improvement of their knowledge about early childhood caries, attitudes toward dental visits and professional care, and their perceived behavioral control (P value < 0.05) (Table 2). The improved intention was more significant in participants with a refugee status, income higher than \$2000/month, dental insurance, and a child born in Canada (Table 3).

3.2. Discussion. Early childhood caries (ECC) is a serious public health concern influencing children's well-being and their quality of life [18]. Children of low-income minority groups including ethnic minorities are at highest risk to ECC [19]. A number of studies have indicated that enhancing access to oral help services, while important, is not adequate to improve oral health of minority populations [9]. Therefore, efforts are required to promote and implement community-based educational programs that are culturally sensitive and deliverable by the local community workers.

It has been shown that providing information through brochures, pamphlets, text messages, and lectures only has a modest impact on improving oral health-related knowledge and behaviors [9, 10]. Mothers who participated in oral health workshops demonstrated significantly more increased knowledge and improved behavior than those in the control group who only received oral health information through pamphlets [10]. Similarly, in our study, a hands-on educational workshop was successful in improving parental knowledge, attitude, PBC, and intention towards preventive dental

TABLE 2: Descriptive parental pre- and postintervention scores.

	Pretest			Posttest			<i>t</i> value	<i>P</i> value
	Mean (SD)	Min	Max	Mean (SD)	Min	Max		
Knowledge	11.86 (3.5)	3.0	21.0	20.78 (5.1)	8.0	30.0	-14.7	<0.05
Attitude	6.76 (1.7)	2.0	10.0	7.71 (1.6)	4.0	10.0	-4.8	<0.05
Perceived behaviour control	2.9 (1.7)	0.0	6.0	4.44 (1.5)	2.0	6.0	-5.0	<0.05
Intention	1.16 (0.7)	0.0	2.0	1.74 (0.4)	1.0	2.0	-7.1	<0.05

Paired *t*-test, *df* = 104.

Note: negative values on this table reflect a positive gain on the posttest. The percentages related to change scores are not shown in the table.

TABLE 3: Percentage change in intention to take their child for regular dental visit in relation to sociodemographic variables.

Variables	Intention to visit a dentist %			<i>P</i> value
	Pretest	Posttest	Change	
Level of education				
High school or below	35.9	65.6	29.7	<0.05
College or university	56.0	88.0	32.0	<0.05
Immigrant status				
Refugee	37.0	68.5	31.5	<0.05
Family	36.4	72.2	35.8	>0.05
Economic	71.4	100.0	28.6	>0.05
Living with whom				
Both parents	35.4	77.1	41.7	<0.05
Single parent	50.0	68.4	18.4	>0.05
Income				
<\$2000	29.4	52.9	23.5	>0.05
\$2000-\$4000	50.0	83.3	33.3	<0.05
>\$4000	50.0	100.0	50.0	<0.05
Child's birth place				
Born in Canada	37.3	70.6	33.3	<0.05
Not born in Canada	41.7	72.2	30.5	>0.05
Child's dental insurance				
No	33.3	61.9	28.6	<0.05
Yes	46.9	81.6	34.7	<0.05

measures for their children. Therefore, a combined provision of information through written materials or lectures and hands-on demonstrations is more successful in enhancing participants' uptake and, thus, is recommended for oral health promotion programs [10, 20, 21]. Using interactive audio/visual methods in community-oriented workshops would minimize the language and health literacy barriers in education of newcomers and has been shown to be more effective than other conventional approaches for this population [9, 22].

In this study, we invited parents to participate in the workshops because young children are greatly influenced by their parents' behaviors [10]. Therefore, providing required information and culturally appropriate training to parents may improve children's oral health. It has been reported that children whose mother had a higher level of dental health knowledge presented healthier oral health practices [10, 23, 24]. For instance, tooth brushing frequency was higher for children who received mother's supervision [25]. While dental health education programs for school children

have been successful in increasing their knowledge about dental health, they did not result in improved behavior at home [26]. Therefore, in order to improve oral health of children, educational interventions should involve parents as well.

The sociodemographic profile of parents in this study was characterized by family structure, level of education, immigration status, income, children's birth place, and duration of living in Canada. While dental care seeking behavior for children has been reported to be considerably affected by their mothers' education and higher family income [27, 28], we did not find a significant correlation between improved intention to seek dental care for children after the workshop and parental education. However, the intention of parents with a higher monthly income was more likely to improve after the educational workshop than that of those with a lower income. The workshop did not significantly change the intention of single parents either. Perhaps, low-income single parents have to deal with more barriers that would adversely affect their intention of performing behavior, so our result

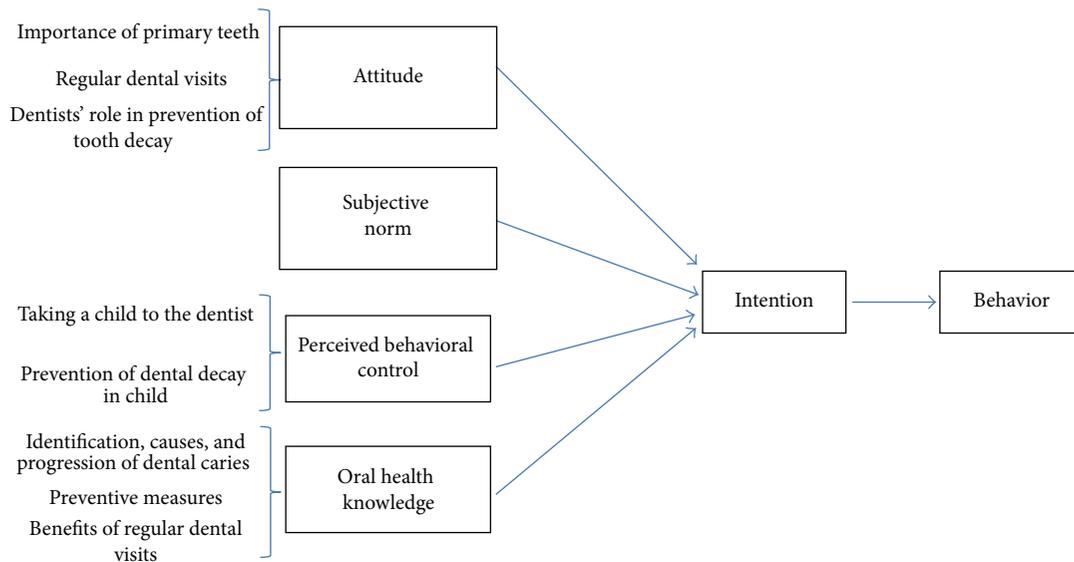


FIGURE 1: Determinants of parental intention to take their child for regular dental checkups.

would not necessarily indicate that the workshop was less effective for these families.

The intention to visit a dentist regularly significantly improved among the participants whose child was born in Canada as compared to the non-Canadian born child. This could be because of the training that expecting parents receive about oral health of infants and toddlers through pre- and postnatal programs available in the Pregnancy Care Centers in Canada. Those parents seem to be more motivated to seek regular dental care for their children. The workshop was also more effective in improving the intention of parents who had lived in Canada less than 5 years as well as those with a refugee status. Being a newcomer, in general, and a refugee, in particular, has been considered as barrier to access dental services and dental attendance [8]. This could be because of newcomers' lack of information or misperceptions about the existing publicly funded resources. The detailed information about the Alberta Health Benefit programs provided in the workshop, including the application process, eligibility criteria, and covered dental services might have motivated these families to consider taking their child to the dentist.

Theory-driven interventions are based on the premises that it is possible to change cognitions and that those changes in turn will encourage changes in future performance [13]. TPB is a widely used social cognitive model stating that health-related behaviors can be predicted by the intention [14]. Stronger attitude, social norm, and perceived behavioral control have been proven to result in performing orally healthy behaviors [28]. Increased knowledge about a behavior has also been a predictor of improved attitude [29]. Parental intention to control their preschoolers' consumption of sugary snacks and the performance of this behavior were successfully predicted by TPB constitutes [6]. School-based educational workshop has been proven to be effective in improving oral health knowledge and attitudes toward less sugar intake and more frequent brushing in primary school

children in Tanzania. The TPB constructs also significantly influenced the intention towards sugar resistance following the completion of an intervention program, which aimed to improve students' attitudes and knowledge about sugar snack consumption [13]. Therefore, knowledge as an independent component can also significantly affect the intention [29, 30]. Our results, consistent with previous studies, demonstrated a positive correlation between parental oral health knowledge, attitudes, and perceived behavioral control and their intention (Figure 1). However, some participants had lower scores in the posttest that could be because of their limited English skills even though the bilingual community workers were available to help with interpretation of the workshop content and the questionnaires.

While parental knowledge regarding early childhood caries and the importance of oral hygiene and routine dental checkups in prevention of this chronic disease considerably improved in the posttest, no significant change was found in identifying sugary food and drinks as the cause of dental decay because the majority of the participants were well-aware of this caries risk factor in the pretest. Perhaps, in the educational programs for recent immigrant parents, more emphasis should be placed on improving parental skills and their strategies to control their child's eating habit instead of providing information about the cariogenic effect of surgery food or drinks.

This study had some limitations that need to be acknowledged. First, our sample size was too small due to difficulties in recruiting eligible participants, even though our community collaborators had a strong network within the target communities. Conducting the workshop itself was also challenging because of the participants' low English proficiency and literacy level despite the presence of bilingual community workers who were there to help with the interpretation of the contents of the workshop. Interpreter's bias was also another limitation that might have influenced

the participants' responses. In addition, we only evaluated the impact of the workshop on parental intention to take their child for a regular dental care, but we do not know if the intention resulted in performing the behavior. A continuous reinforcement of the behavior of interest in multiple workshops maybe required for parents to translate their intention into action.

4. Conclusions

A one-time workshop was effective in improving parental attitude, perceived behavioral control, and oral health knowledge among African newcomers. Improved knowledge, attitude, and behavioral control resulted in a positive intention towards preventive dental visits for young children. However, a one-time intervention may not be adequate when retention of knowledge and change in behavior are the intended goals. In order to be more sustainable and effective, oral health educational programs should be integrated in ongoing community initiatives.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

Acknowledgments

This study was funded by Alberta Innovates-Health Solution. The authors gratefully acknowledge Multicultural Health Brokers Co-op and Edmonton Multicultural Coalition for their collaboration.

References

- [1] R. I. Werneck, H. P. Lawrence, G. V. Kulkarni, and D. Locker, "Early childhood caries and access to dental care among children of Portuguese-speaking immigrants in the City of Toronto," *Journal of the Canadian Dental Association*, vol. 74, no. 9, p. 805, 2008.
- [2] M. S. Amin, "Utilization of dental services by children in low-income families in Alberta," *Journal of the Canadian Dental Association*, vol. 77, article b57, 2011.
- [3] S. Horton and J. C. Barker, "Rural mexican immigrant parents' interpretation of children's dental symptoms and decisions to seek treatment," *Community Dental Health*, vol. 26, no. 4, pp. 216–221, 2009.
- [4] W. Sohn, L. S. Taichman, A. I. Ismail, and S. Reisine, "Caregiver's perception of child's oral health status among low-income African Americans," *Journal of Pediatric Dentistry*, vol. 30, no. 6, pp. 480–487, 2008.
- [5] S. Redman, P. Booth, H. Smyth, and C. Paul, "Preventive health behaviours among parents of infants aged four months," *Australian Journal of Public Health*, vol. 16, no. 2, pp. 175–181, 1992.
- [6] Statistics Canada and The African Community in Canada, Ottawa: Statistics Canada; 2007, <http://www.statcan.gc.ca/pub/89-621-x/89-621-x2007010-eng.htm#1>.
- [7] G. Flores and H. Lin, "Trends in racial/ethnic disparities in medical and oral health, access to care, and use of services in US children: has anything changed over the years?" *International Journal for Equity in Health*, vol. 12, article 10, 2013.
- [8] M. S. Amin, A. Perez, and P. Nyachhyon, "Parental awareness and dental attendance of children among African immigrants," *Journal of Immigrant and Minority Health*, pp. 1–7, 2013.
- [9] R. M. Brown, D. Canham, and V. Y. Cureton, "An oral health education program for Latino immigrant parents," *The Journal of School Nursing*, vol. 21, no. 5, pp. 266–271, 2005.
- [10] H. S. Choi and H. Y. Ahn, "Effects of mothers involved in dental health program for their children," *Journal of Korean Academy of Nursing*, vol. 42, no. 7, pp. 1050–1061, 2012.
- [11] P. Curd, K. Ohlmann, and H. Bush, "Effectiveness of a voluntary nutrition education workshop in a state prison," *Journal of Correctional Health Care*, vol. 19, no. 2, pp. 144–150, 2013.
- [12] H. Lucander, K. Knutsson, H. Salé, and A. Jonsson, "'I'll never forget this': evaluating a pilot workshop in effective communication for dental students," *Journal of Dental Education*, vol. 76, no. 10, pp. 1311–1316, 2012.
- [13] A. N. Åström and K. O. Mashoto, "Changes in oral health related knowledge, attitudes and behaviours following school based oral health education and atraumatic restorative treatment in rural Tanzania," *Norsk Epidemiologi*, vol. 22, no. 1, pp. 21–30, 2012.
- [14] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179–211, 1991.
- [15] W. Hardeman, M. Johnston, D. Johnston, D. Bonetti, N. Wareham, and A. L. Kinmonth, "Application of the theory of planned behaviour in behaviour change interventions: a systematic review," *Psychology and Health*, vol. 17, no. 2, pp. 123–158, 2002.
- [16] A. N. Åström and S. N. Kiwanuka, "Examining intention to control preschool children's sugar snacking: a study of carers in Uganda," *International Journal of Paediatric Dentistry*, vol. 16, no. 1, pp. 10–18, 2006.
- [17] M. Amin and A. Perez, "Is the wait-for-patient-to-come approach suitable for African newcomers to Alberta, Canada?" *Community Dentistry and Oral Epidemiology*, vol. 40, no. 6, pp. 523–531, 2012.
- [18] Y. Qiu and H. Ni, *Utilization of Dental Care Services by Asians and Native Hawaiian or Other Pacific Islanders: United States, 1997–2000*, US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2003.
- [19] N. N. Maserejian, F. Trachtenberg, C. Hayes, and M. Tavares, "Oral health disparities in children of immigrants: dental caries experience at enrollment and during follow-up in the New England children's amalgam trial," *Journal of Public Health Dentistry*, vol. 68, no. 1, pp. 14–21, 2008.
- [20] H. Y. Ahn and G. M. Yi, "Application of dental health program for elementary school children," *Journal of Korean Academy of Child Health Nursing*, vol. 16, no. 1, pp. 49–55, 2010.
- [21] N. H. Lee and I. H. Park, "A study on the effects of social reinforcement in peer groups on children's dental health behavior," *Journal of the Korean Society of School Health*, vol. 13, no. 1, pp. 117–129, 2000.
- [22] C. S. Melvin, "A collaborative community-based oral care program for school-age children," *Clinical Nurse Specialist*, vol. 20, no. 1, pp. 18–22, 2006.
- [23] Y. K. Lee, "A study on mothers' oral health knowledge and oral health management behavior of children," *Journal of Korean Society of Dental Hygiene*, vol. 10, no. 1, pp. 93–106, 2010.

- [24] B. H. Jun, Y. S. Choi, and Y. S. Cho, "The effects of parent's oral care on children," *The Journal of the Korean Academy of Dental Health*, vol. 33, no. 2, pp. 211–226, 2009.
- [25] S. M. Zahra, *Oral Health among Iranian Preadolescents: A School-Based Health Education Intervention*, Faculty of Medicine, University of Helsinki, Helsinki, Finland, 2010.
- [26] H. H. Min and S. H. Min, "Effects on the school dental clinic operation for children's oral health," *Journal of Korean Society of Dental Hygiene*, vol. 10, no. 3, pp. 495–502, 2010.
- [27] M. Wierzbicka, P. E. Petersen, F. Szatko, E. Dybizbanska, and I. Kalo, "Changing oral health status and oral health behaviour of schoolchildren in Poland," *Community Dental Health*, vol. 19, no. 4, pp. 243–250, 2002.
- [28] M. B. J. Camargo, A. J. D. Barros, P. Frazão et al., "Predictors of dental visits for routine check-ups and for the resolution of problems among preschool children," *Revista de Saúde Pública*, vol. 46, no. 1, pp. 87–97, 2012.
- [29] L. R. Fabrigar, R. E. Petty, S. M. Smith, and S. L. Crites Jr., "Understanding knowledge effects on attitude-behavior consistency: the role of relevance, complexity, and amount of knowledge," *Journal of Personality and Social Psychology*, vol. 90, no. 4, pp. 556–577, 2006.
- [30] Y. A. B. Buunk-Werkhoven, A. Dijkstra, and C. P. van der Schans, "Determinants of oral hygiene behavior: a study based on the theory of planned behavior," *Community Dentistry and Oral Epidemiology*, vol. 39, no. 3, pp. 250–259, 2011.



Hindawi
Submit your manuscripts at
<http://www.hindawi.com>

