Lack of Oral Care Policies in Toronto Daycares

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Abstract

Objectives: *Currently, there is a deficit of information on policies regarding oral hygiene practices in Toronto daycares. It is unknown if any tooth-brushing programs are in existence and if children are permitted to follow professional advice on oral hygiene. The main objectives of this investigation were to a) determine the prevalence of oral care policies in daycares and b) examine the availability of resources.* ***Methods:*** *Telephone interviews were conducted with daycare supervisors using a pretested questionnaire. Summary statistics and the chi-square test were used to analyze the results.* ***Results:*** *Two hundred forty-nine questionnaires were completed (response rate of 99.6 percent), representing 38 percent of the total daycare population (650) in Toronto. Eighty-three percent did not have a policy on oral care and 11 percent would not cede to requests from parents or medical professionals to brush teeth. However, 50 daycares indicated that their centers used to have a tooth-brushing program, and most (79 percent) were open to establishing an oral care policy. Fifteen percent reported not having proper sinks for tooth brushing.* ***Conclusions:*** *Many daycares do not have a policy regarding oral hygiene. A policy that encourages and provides guidance on safe tooth-brushing procedures is needed and may improve the oral health of preschool children.*

Key Words: child, oral health, preschool, daycare, policy, tooth brushing, dental caries

Introduction

Caries on the Rise. Despite widely reported decreases in dental caries in the permanent dentition over the last 50 years, children in the birth-to-five-year age with primary dentitions, are still carrying a disproportionately large burden of the disease (1,2). Further, recent reports reveal that the disease, which is associated with discomfort, pain, infection, and can disturb sleep, speech, and eating habits, is on the rise among children under six (3,4). In Toronto, Ontario, the rate of tooth decay has increased from 9.8 percent to 11.6 percent over the last 6 years in this age group; in British Columbia, the rate of visible decay in kindergarteners has increased from 32 percent in 1993 to 41 percent in 2002, and in Dorval, Quebec, the caries rate in preschoolers has doubled since 2003 (1,5). This rising trend is not limited to Canadian populations; already, several international studies have reported that caries rates among 5-year-olds are either increasing or not improving. For example, after a decline in children's caries rates throughout the 1980s, the UK experienced an increase in decay in the last two decades (6). Similarly, reports from the United States, Greece, Ireland, and Sweden have reported increases in decay severity and/or prevalence among their preschoolers (2,7-9).

Effectiveness of Tooth Brushing. It is well known that regular brushing is beneficial for the prevention and control of dental caries (10). The activity removes plaque and bacteria from the mouth and clears any lingering food particles. An oral care program that allows children to brush their teeth after snacks or mealtimes would be very beneficial to their oral health (11). For children who do not brush at home, a daily tooth-brushing routine would ensure that teeth are brushed at least once a day and would help promote the development of a lifelong healthy habit. The activity also provides an opportunity for self-care and a chance to intervene early in the decay process. In China, an oral health education program that included twice-daily tooth brushing was effective in establishing good oral health habits among preschool children and increased the oral health knowledge of their parents (12). Other studies have demonstrated the effectiveness of a supervised tooth-brushing program in terms of reducing the prevalence of caries (13-15). In London, England, an investigation on the effects of daily supervised tooth brushing in high caries prevalence schools found that cavity rates in intervention groups were significantly lower than in children who were in nonintervention groups; a follow-up study showed that a significant reduction was sustained four and a half years after the initial investigation (15,16). Not surprisingly, in populations where a large proportion of children are at high-risk for caries development, supervised tooth-brushing programs have an even greater impact. A 4-year longitudinal study of first graders in Jordan found that those who had supervised daily tooth brushing were 6.4 times less likely to develop dental caries than those who had not (17). The success of

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these programs suggests that a similar Canadian-based initiative would be effective in controlling dental decay among children in Canada. It must be appreciated that for such programs to be effective, adult supervision will be required for younger aged children.

High-Risk Groups. Although it would be advantageous for all children to brush in class, high-risk groups would especially benefit from this practice. Children with dental appliances, medical conditions, and those from low socioeconomic backgrounds are more susceptible to caries development than others (18-20). Children born outside of Canada are 3.5 times more likely to have early tooth decay than those born in Canada. Further, families in the lowest socioeconomic quartile are unlikely to visit the dentist, and are almost twice as likely to experience dental decay as those in the highest quartile (21).

Children with compromised immune systems are susceptible to opportunistic infections and consequently, are more vulnerable to caries (22). Furthermore, children who suffer from physical complications, such as palate disfigurations or movement disorders, are limited in their oral hygiene ability (23). Lastly, dental orthodontic appliances increase susceptibility to oral disease by making hygiene more difficult (18). Most dental professionals agree that these higher risk children require a more intensive oral care routine than what the general guidelines suggest (24).

Study Rationales. Currently, there are no data on the prevalence of oral care policies or practices in daycares in Toronto; further, it is unknown if daycares allow children to follow professional advice on oral hygiene. However, anecdotal evidence suggests that permission to brush teeth varies significantly between daycares, with some forbidding the practice outright. Parents of high-risk children have given many reasons for why their children cannot practice oral hygiene in the daycare. Complaints ranged from supervisor concerns over the child's safety (lack of supervision, fear of child being bullied or harassed in the washrooms) and health (transfer of germs from toothbrushes), to property vandalism (tampering of toothbrushes or daycare property) and lack of facilities (sinks and running water in the classrooms). The purpose of this systematic survey was to determine what oral hygiene opportunities were available to children attending daycares. This knowledge can serve as a basis for discussion on whether an implementation of an oral care program would be feasible and beneficial to children. With better understanding of current hygiene behaviors, the appropriate actions can be taken to combat the rising prevalence of childhood dental decay.

Study Objectives. The main objectives of this study were to a) determine the prevalence of oral care policies in daycares and b) examine the availability of resources. A secondary objective was to analyze policy prevalence by neighborhood income class. The complete questionnaire can be seen in Appendix S1.

Methods

This study was approved by the Research and Ethics Review Committees of the University of Toronto, Faculty of Dentistry.

Data Collection. A pretested questionnaire was used to collect all data. A sample of 10 daycares was used to pretest the questionnaire. Three answer options were removed in the final version of the questionnaire. This sample group was not included in the final analysis. Answer options for each question were not mutually exclusive and daycare supervisors were encouraged to verbally elaborate on their responses. A comprehensive list of accredited childcare facilities in Toronto was compiled. All 650 listed daycares were randomized using a computer software program. The daycares were surveyed by telephone in the order that they appeared on the list. Only one interviewer (E. G.), who was trained in market research, conducted all of the interviews. Each interview lasted approximately 5 minutes. Responses were recorded and stored on a computer database.

Sample Size Calculations. The sampling frame was all 650 daycares in Toronto, each being equally eligible for the study. In this study, a "daycare" is defined as any "regulated premise that receives more than five children who are not of common parentage . . . for a continuous period not exceeding twenty-four hours." Using an online sample-size calculator, it was determined that 250 daycares were required to achieve results with a study power of 80 percent and a 5 percent margin of error (25). This estimate was calculated from the known total population of daycares in Toronto (650) and was based on the assumption that 50 percent of institutions have a policy regarding oral hygiene as no previous studies of this kind have been conducted before.

Statistical Analysis. Summary statistics were used for analyzing completed questionnaire data. Chi-squared statistics were used for comparing policies by neighborhood income class at the 5 percent significance level. All qualitative responses were categorized and interpreted from a qualitative standpoint. The 2001 Census data from the city of Toronto were used to analyze policy prevalence by neighborhood income class (26).

Results

Response Rates. Following the randomized list of the 650 daycares, the first 250 daycares that agreed to participate were used in the study. Out of the 250 daycare supervisors reached by telephone, a total of 249 supervisors completed the questionnaire. This met the 99.6 percent target sample goal that was set prior to data collection. Only one supervisor opted out of the study after agreeing to participate. Overall, the survey captured 38 percent of all regulated daycares in Toronto.

Daycares with Policy. Forty-three daycares (17.3 percent) indicated that they currently have an oral care policy. The policy details varied among daycares. Examples of policy

Figure 1
(a) Brushing teeth after lunch was the most common policy detail (40 daycares), followed by children being asked to bring in their own toothbrush (29), tooth brushing on a voluntary basis (6), brushing teeth, but not after lunch (2), and brushing if child has a doctor or dentist's note (1) or has special needs (1). (b) The vast majority of policies were established on the initiative of the daycare director/board of directors (32), and a few introduced the policy in response to parental requests (3) and a recommendation from public health (1)

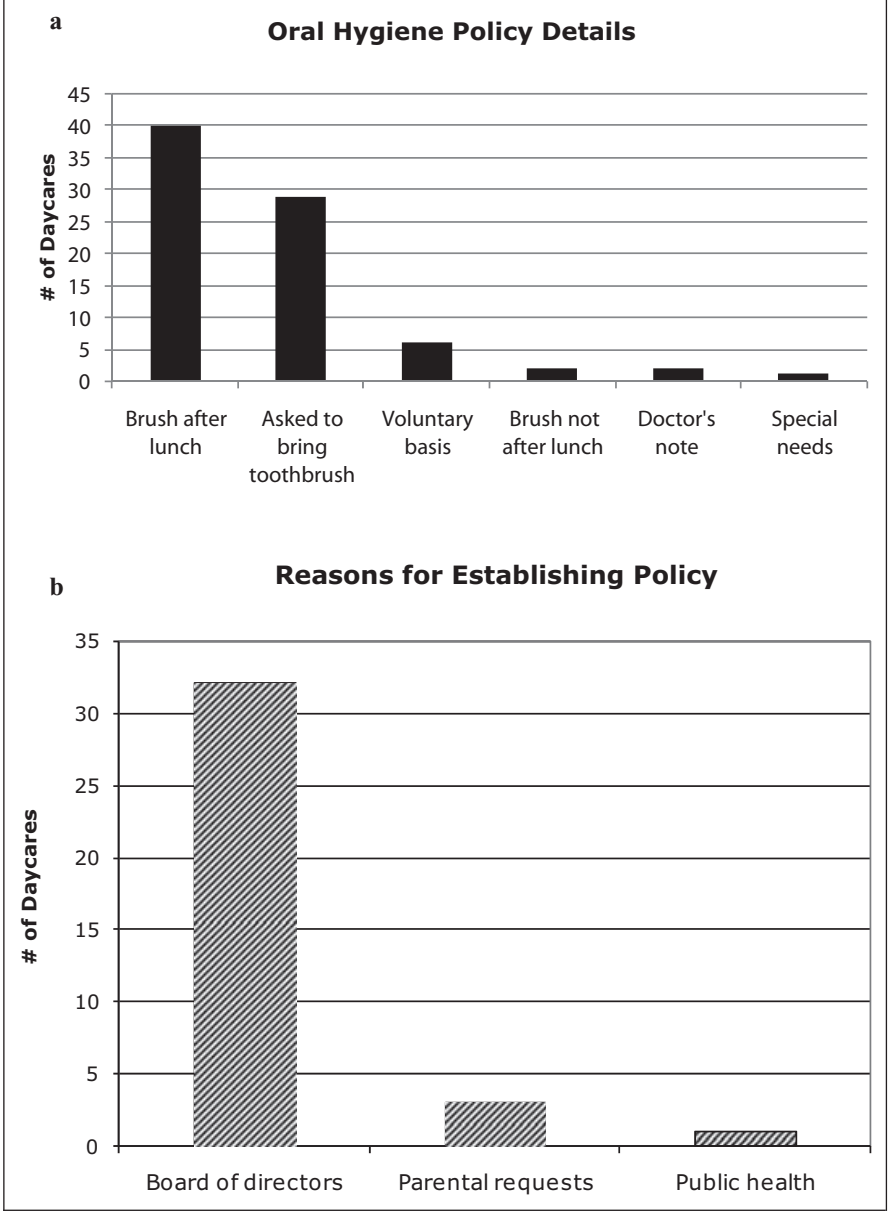


Table 1
Reasons for Not Having an Oral Care Policy (in Order of Selection Frequency)

1	Health concerns (transfer of germs)	56%
2	Lack of appropriate storage for toothbrushes	42%
3	Did not have appropriate facilities	22%
4	Not a primary concern	21%
5	Due to a recommendation from authority (public health)	17%
6	Lack of adequate supervision	13%
7	Concerns over the children's safety	2%

details included children being asked to bring a toothbrush for daily brushing, allowing children to brush teeth upon request, and making allowances for children with special needs. In general, policies were established in response to a recommendation from the director or board of directors and were created without outside help (Figure 1).

Institutions without Policy. Two hundred and six daycares (82.7 percent) did not have a policy. The primary reasons for not having a policy are listed in Table 1. Health concerns and lack of proper storage for toothbrushes were cited as the biggest hindrances to brushing teeth. Twenty-one percent of daycares indicated that oral health was not a primary concern for them.

Most daycares, 83 percent, indicated that they would make exceptions for children with medical or dental needs, and 79 percent would make allowances for children with special needs. Thirteen percent would require a doctor or dentist's note to allow brushing. Eleven percent would not make exemptions for any child to have their teeth brushed on the daycare's premises. In regards to the feasibility of an oral care policy in the future, 42 percent of supervisors indicated that it would be feasible with appropriate storage, 22 percent would require the proper facilities, and 26 percent would do it if a policy was mandated by public health. In contrast, 18 percent of supervisors believed that an oral hygiene policy would not be feasible because there was no time for it in their schedule, and 21 percent were not interested in having a policy in their center.

Oral Health Activities and Parental Requests. Most daycares had some sort of oral-hygiene-related activity. These activities ranged from talking about hygiene

Table 2
Frequency Table of Categorized Qualitative Responses. This is a Mutually Exclusive Tabulation, Where a Single Comment Is Assigned to One Category

Daycares with policy	
Q. What does your policy include?	
Brush on a daily basis	21
Brush if requested	3
Not permitted to brush	0
Q. Why was the policy established?	
General comment	9
Policy around for <10 years	4
Policy around for >10 years	10
Q. Experts consulted in creation of policy?	
Yes (comment)	3
Not sure/don't remember	3
Daycares without a policy	
Q. Why no policy?	
Used to brush	26
Used to brush – Public Health concerns	24
Considered starting a program	18
Have never thought about it	11
Not our responsibility	3
Other	2
Q. Do you make exceptions?	
Yes, upon request	8
Never had requests	5
Accommodated requests in the past	5
On a case by case basis	3
Other	11
Q. Establishing an oral care policy would be . . .	
In need of more/better resources	18
Will consider	16
Never been discussed	8
Not interested	11
Other	28
All daycares	
Q. What kind of oral-health-related activities?	
Healthy eating	10
Teaching about hygiene	3
Provide resources for parents	3
Have "workshops"	11
Use dentist prop box/kits	5
Used to have dental hygienists visit	8
No activities	6
Other	11
Q. Tooth-brushing requests from parents?	
Case by case basis	25
With reservation	5
Only for a medical reason	3
Will accommodate requests	9
Will NOT accommodate requests	4
Other	5
Q. Comments and Suggestions	
Positive experience with brushing	15
Would like to start a program	15
Had negative experience with brushing	7
Other	19

informally to having a dentist or dental hygienist visit the daycare to talk about oral care. In response to whether the center would accommodate requests from parents (not necessarily for medical reasons), 18 percent reported that all children may brush their teeth and that parental requests are not required, 56 percent would accommodate requests, and 11 percent would allow brushing only with a doctor or dentist's note. Ten percent of daycares would not accommodate tooth-brushing requests.

Sinks. 85 percent of daycares reported having sinks that are suitable for brushing teeth.

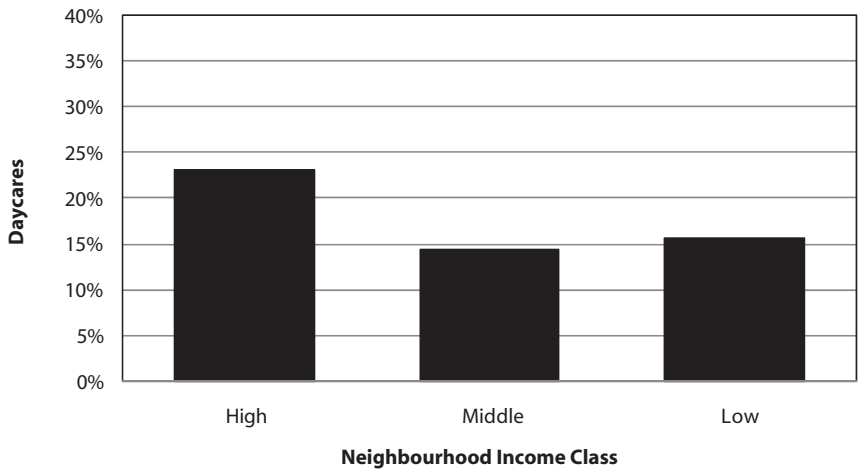
Qualitative Results. Many respondents elaborated on their responses with specific examples pertaining to their daycares. Daycares with a policy expanded on its details and included the number of years that it has been in existence. For those without a policy, one of the most frequent comments related to their center's previous tooth-brushing program. Specifically, 20 percent (52 daycares) revealed that they used to have a tooth-brushing routine, and almost half of these explicitly mentioned that they stopped because of concerns raised by public health inspectors. In general, daycares were open to the idea of establishing some sort of routine if supplemented with support and guidance. A frequency table of categorized qualitative responses is shown in Table 2.

Socioeconomic Analysis. The prevalence of oral hygiene policies was not significantly different among high-, middle-, and low-income neighborhoods (Figure 2). The randomly selected 249 daycares were distributed evenly among the three socioeconomic income classes.

Discussion

Novelty of Study. Knowledge of oral care practices in Canadian childcare institutions was very limited prior to the commencement of this study. Any indication of whether children were allowed to practice oral hygiene was only available

Figure 2
Twenty-three percent of daycares in high-income neighborhoods had an oral care policy, 14 percent in middle-income neighborhoods, and 16 percent in low-income neighborhoods. No significant differences were found ($P > 0.18$)



through anecdotal evidence. However, oral hygiene guidelines for daycares have been established in jurisdictions outside of Canada. In Glasgow, Scotland, a supervised tooth-brushing program is running in 45 percent of preschool establishments, and in the United States, a national child development program for underprivileged children called Head Start follows a comprehensive oral care program where children brush their teeth on a daily basis (27,28). It is our hope that with the information gathered in this survey, a regulation that allows children to brush during daytime hours and provides instruction on how to run a program for those who wish to implement one can be developed. Previously, we have proposed some guidelines for the development of such an oral care policy in daycares (29).

Lack of Policies. Eighty-three percent of daycares did not have a policy regarding oral hygiene. However, a surprising finding was that more daycares stated that they used to participate in a daily tooth-brushing activity than daycares that currently do. The most cited reason for stopping the program *was* hygiene concerns raised by public health inspectors. This may be related to the fact that there is currently no regulation within the Ontario Day Nurseries Act, 2007 (The Act) that addresses tooth brushing specifically (30). Among other things, The Day Nurseries Act is responsible for ensuring that all daycare establishments adhere to set rules and regulations and provide a healthy environment for child development. Although The Act includes a clause on general sanitary practice, no specific mention is made of tooth-brushing policies. However, tooth brushing requires special attention in that specific storage methods are required to prevent cross-contamination between toothbrushes and to minimize bacterial growth (31). It appeared that without explicit direction, many daycare establishments developed their own oral care protocols, which did not necessarily adhere to hygiene codes. An improper sanitary system was the likely cause that prompted inspectors to recommend against the activity in certain centers. Further, several daycares decided to forbid tooth brushing for all children to avoid any potential health concerns. A regulation within the Day Nurseries Act that outlines and promotes the proper way to brush teeth within a daycare, for those who wish to do so, may encourage supervisors to instate or reinstate the practice.

Daycares with a Policy. The Day Nurseries Act requires that all daycare operators have a written statement that outlines its program philosophy (Reg. 262, R.52) (30). Even so, it contains specific regulations that pertain to all daycares, for example, clauses on nutrition requirements, dispensation and storage of medication, and how to deal with allergies (30). However, as it does not have a regulation on proper tooth-brushing procedures, it is no surprise that daycares that chose to include oral hygiene as part of their "program philosophy" had such varying takes on it. A clause relating to oral hygiene would avoid confusion regarding establishing oral care policies and hopefully would play a role in combating the rising caries rates among preschoolers. Needless to say, the responsibility of developing and establishing a tooth-brushing program should be a collaborative effort and involve various levels of government and dental and parental organizations.

No Socioeconomic Trends. A socioeconomic analysis was performed to verify whether a relationship, similar to the low-income – increased caries risk association – would be found (32). The lack of association between neighborhood income class and policy prevalence indicated that the extent of oral care initiatives were similar across the city. However, as only 17 percent of daycares indicated having an oral care policy, there is much room for growth across all regions. Further, targeting daycares by neighborhood may be irrelevant, as a daycare's location does not necessarily correspond to a child's place of residence. Any initiative to promote "tooth-brushing programs" should employ a

"whole-population" rather than only a "high-risk-group" approach, although children that are deemed to be at a high risk for caries by professionals should be able to brush their teeth, regardless of the existence of a program. The requirement that high-risk children be allowed to brush should be a part of any future policy. Further, a high-risk approach would be difficult to implement as a daycare can have children of varying socioeconomic and health backgrounds, and identification of those who will and who will not benefit from the program can become unwieldy. On the other hand, all children, whether diseased or healthy, can benefit from developing and establishing good oral hygiene habits from this early age.

Attitude. Some critics have argued that tooth brushing by children under the age of 10 is inefficient due to lack of motivation and poor manual dexterity, and that optimal oral hygiene may be unrealistic (33). A few supervisors surveyed in this study voiced similar concerns. However, establishing a dental routine is very important for younger children as evidence indicates that good oral health behaviors attained in the early years will translate to good oral health behaviors and good oral outcomes in adult life (34). Practice and perseverance are essential to the development of skills required to maintain an adequate level of oral hygiene, and the earlier the intervention, the more effective is the result (3).

Recognizing that some supervisors will be resistant to adopting optimal oral hygiene behavior, some resources should be directed toward providing support, teaching skills, and information about dental disease. For those who are daunted by the task, the importance of this preventive activity needs to be promoted so it becomes more accepted by the teaching staff and children. At minimum, children who are deemed at risk should be allowed to brush during daycare hours. For those who believe that dental caries is not an important public health problem should be made aware of the recent rising trends. Our results suggest that daycare staff should be made aware that tooth brushing is a relatively effective and inexpensive means of primary prevention.

Feasibility of an Oral Care Policy. It has already been established that tooth brushing in preschools is effective in combating dental decay (13,15,16). In Scotland, a government mandated policy on oral care in daycares proved to be very effective in reducing caries rates in pre-5-year-olds (27). Also, the success of tooth-brushing programs in Scandinavian countries, which are the longest standing and most developed, have been well documented.

In general, daycares were open to the idea of a tooth-brushing program. The typically small class sizes and relatively high supervisor-to-child ratios would make a tooth-brushing program feasible. Only 13 percent of supervisors raised concerns over supervision. Daycares also tend to have flexible schedules, with essentially free reign over what they would like to include in their programs. Most daycares had the appropriate facilities and usable sinks for tooth brushing. One outstanding hindrance was the lack of proper storage units (42 percent); however, hygienic multistorage units are available on the market, and the only real storage requirement is that toothbrushes are air dried and stored in an upright position where they do not touch (31). Overall, a cooperative effort between daycare representatives and dental care affiliates should be successful in creating a regulation that allows children with a medical note to brush teeth and provides a directive on how to run a tooth-brushing program.

Limitations and Recommendations for Future Research

One limitation of the study is that it was localized to daycares in the city of Toronto, and therefore may not be representative of other populations. However, because of the large sample size and apparent lack of policies across the country, it is anticipated that findings would be similar in other jurisdictions. Several limitations pertained to the questionnaire. As the responses were self-reported, the answers may have painted a too-positive picture of tooth brushing and oral hygiene activities, as they are generally considered to be positive attributes. However, this did not appear to be a problem as many respondents admitted to not having a policy and appeared to be candid in their responses. Future steps should focus on developing and implementing a policy that allows practicing oral hygiene on an as-per-needs basis in daycares.

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Supporting Information

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Oral care questionnaire

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