Patients with Special Health Care Needs in General and Pediatric Dental Practices in Ontario

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ABSTRACT

The objective of this study was to determine the involvement of Ontario's general and pediatric dentists in providing care to patients with special health care needs (PSHCNs). A questionnaire was developed and sent to a randomly selected sample of general dentists and to all pediatric dentists in Ontario; response rates were 52% and 90%, respectively. Most general dentists and all pediatric dentists reported that they provided a full range of dental services to PSHCNs. Most (80%) general dentists treat PSHCNs of all ages, whereas 60% of pediatric dentists report only treating PSHCNs up to the age of 18 years. A majority of both groups report treating PSHCNs whose dental care is paid through various government-funded programs. Most general dentists received training in the treatment of PSHCNs in undergraduate dental school, and 40% reported taking continuing education courses in this area. Most pediatric dentists received this training during their advanced dental specialty training, and 29% reported taking continuing education courses in this area. The results of this survey appear to demonstrate that general and pediatric dentists in Ontario provide a full range of dental services to PSHCNs, treat patients with a variety of disabilities and of all ages and are interested in pursuing continuing education that focuses on the delivery of dental care to PSHCNs. However, the results may be inaccurate because of question design flaws and responder bias among the 52% of surveyed general dentists who returned their questionnaires.

MeSH Key Words: dental care for disabled; dentist's practice patterns; pediatric dentistry

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People are considered to have special health care needs if they have physical, developmental, mental, sensory, behavioural, cognitive or emotional impairment or a condition that requires medical management, health care intervention or use of specialized services or programs.[1] The condition may be developmental or acquired and may limit daily self-maintenance activities or substantially limit a major life activity.[1] Patients with special health care needs (PSHCNs) require delivery of dental care beyond what is customary because of their medical condition or limitations.[2–5] Some PSHCNs have medical conditions that call for extraordinary care and require dentists to have specialized knowledge.[2–9] PSHCNs can experience difficulty obtaining dental care.[5–9] Several reasons for this have been identified:

- reimbursement for dental services is inadequate (e.g., through government programs)
- many dentists have not been trained to treat PSHCNs
- some patients are uncooperative during dental treatment
- some dentists believe special equipment is required to provide care
- dentists are too busy with other patients.[3–11]

Table 1 Profile of respondents

	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Gender		
Male	418 (79.8)	56 (67.5)
Female	100 (19.1)	27 (32.5)
Not stated	6 (1.1)	–
Years since graduation		
<10	101 (19.3)	10 (12.0)
10–19	141 (26.9)	23 (27.7)
20–29	158 (30.2)	27 (32.5)
≥30	112 (21.4)	21 (25.3)
Not stated	12 (2.3)	2 (2.4)
Treat PSHCNs	460 (88.9)	83 (100)

PSHCNs = patients with special health care needs.

Table 2 Types of PSHCNs managed by respondents

Types of PSHCNs	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Arthritis — severe[a]	311 (59.4)	27 (32.5)
Asthma — severe[a]	167 (31.8)	46 (55.4)
Autism[a]	144 (27.5)	79 (95.2)
Cancer — active[a]	321 (61.2)	41 (49.4)
Liver (hepatitis B or C; cirrhosis)[a]	227 (43.3)	23 (27.7)
Cerebral palsy[a]	207 (39.5)	77 (92.8)
Craniofacial anomaly[a]	106 (20.2)	67 (80.7)
Diabetes — severe	264 (50.4)	45 (54.2)
Stroke (with impairment)[a]	302 (57.7)	16 (19.3)
Down syndrome[a]	300 (57.3)	82 (98.8)
Other syndromes[a]	111 (21.2)	61 (73.5)
Major psychiatric disorder	226 (43.1)	34 (41.0)
Multiple allergy syndrome[a]	130 (24.9)	34 (41.0)
Cardiovascular disease[a,b]	39 (7.4)	52 (62.7)
Neuromotor disease[a,c]	285 (54.4)	54 (65.1)
Hearing impairment[a]	341 (65.0)	67 (80.7)
Hemophilia[a]	138 (26.4)	46 (55.4)
Immunosuppression	167 (31.8)	32 (38.6)
Leukemia[a]	185 (35.4)	46 (55.4)
Organ transplant	187 (35.6)	34 (41.0)
Developmentally delayed[a]	316 (60.3)	81 (97.6)
Renal disease[a]	218 (41.6)	25 (30.1)
Spinal cord injury[a]	224 (42.7)	48 (57.8)
Visual impairment[a]	242 (46.1)	53 (63.9)
Alzheimer's/dementia/senility[a]	290 (55.4)	7 (8.4)
HIV/AIDS	157 (30.0)	19 (22.9)
Seizure disorder[a]	168 (32.0)	63 (75.9)
Acquired brain injury[a]	145 (27.7)	39 (47.0)
Not stated	6 (1.1)	–

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).
[b]Uncontrolled heart disease; limited function; cyanotic heart disease; congenital defect; post-transplant; pacemaker.
[c]Muscular dystrophy, multiple sclerosis, Parkinson's disease.

The curricula of dental schools in Canada vary regarding the content and time devoted to treating PSHCNs. The Commission on Dental Accreditation of Canada requires that dental school graduates be provided with experiences in the management of medically compromised patients and patients with disabilities or chronic conditions. Pediatric dentists receive specialty training in treating PSHCNs and the Commission on Dental Accreditation of Canada requires that pediatric dentistry specialty graduates receive advanced training in treating PSHCNs.[12]

Ontario is the most populous Canadian province with over 12 million residents who represent 38% of the total population of Canada. Approximately 1.5 million people in Ontario have special needs (13.5% of the population).[13] Approximately 6,000 general dentists and fewer than 100 pediatric dentists are licensed to practise in Ontario. Little is known about the experience of Ontario general and pediatric dentists in treating PSHCNs. Many PSHCNs have coverage for dental care under government programs such as Ontario Works (OW), the Ontario Disability Support Program (ODSP) and Children in Need of Treatment (CINOT). The purpose of this study was to determine the involvement of Ontario's general and pediatric dentists in providing care for PSHCNs.

Method

A self-administered anonymous questionnaire (**Appendix A**) was developed, pilot tested and mailed to a randomly selected sample of 1,000 general dentists and to all 92 pediatric dentists licensed to practise in Ontario by the Royal College of Dental Surgeons of Ontario in 2002. The questionnaires were mailed in 2003. All questions were optional and respondents had the choice of refusing to answer any of the questions. A covering letter explaining the purpose of the study and a stamped self-addressed envelope were included with each questionnaire. Dentists selected for the survey received a second and third mailed questionnaire at 3 weeks and 7 weeks after the first mailing if no response had been

Table 3 Type of care provided to PSHCNs

Type of care	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Examination	500 (95.5)	82 (98.8)
Radiographs (intraoral)	483 (92.1)	79 (95.2)
Radiographs (panoramic)	267 (50.9)	47 (56.6)
Topical fluoride[a]	397 (75.8)	78 (94.0)
Scaling[a]	463 (88.4)	80 (96.4)
Restorative[a]	457 (87.3)	80 (96.4)
Crown and bridge[a]	234 (44.6)	14 (16.9)
Partial/ full denture[a]	317 (60.5)	12 (14.5)
Periodontics[a]	273 (52.1)	31 (37.3)
Endodontics[a]	291 (55.6)	32 (38.6)
Oral surgery	315 (60.1)	55 (66.3)
Orthodontics[a]	52 (9.9)	20 (24.1)
Sealants[a]	265 (50.6)	75 (90.4)
Oral hygiene instruction[a]	360 (68.7)	72 (86.7)

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).

Table 4 Age of PSHCNs treated

Age of PSHCNs; years	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
0–18[a]	16 (3.0)	49 (59.0)
>18[a]	67 (12.7)	2 (2.4)
All ages	419 (80.0)	31 (37.3)
Not stated	23 (4.3)	1 (1.2)

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).

Table 5 Government programs accepted for payment in caring for PSHCNs

Government program	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Children in Need of Treatment[a]	391 (74.7)	74 (89.2)
Ontario Works	422 (80.5)	71 (85.5)
Ontario Disability Support Program[a]	435 (83.0)	78 (94.0)

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).

received. After 3 months from the first mailing, data collection was discontinued and the results were tabulated. Appropriate statistical analysis was performed and the results from general and pediatric dentist respondents were compared.

Results

The response rate was 52% for general dentists and 90% for pediatric dentists. Most responding general and pediatric dentists had been in practice for over 10 years (78.4% and 85.6%, respectively); were male (79.8% and 67.5%, respectively); and reported treating PSHCNs (88.9% and 100%, respectively). The largest number of respondents had been in practice for 11–20 years (30.2% and 32.5%, respectively; **Table 1**).

Most dentists in both groups provide a wide range of services to patients with varied special health care needs (**Tables 2** and **3**). A majority (80%) of general dentists treat PSHCNs of all ages, whereas 60% of pediatric dentists report only treating PSHCNs under the age of 18 years (**Table 4**). They also both treat PSHCNs whose dental care is paid through such government programs as OW, ODSP and CINOT (**Table 5**). With regard to what would motivate them to provide increased care to PSHCNs, 53% of general dentists and 46% of pediatric dentists cited increased compensation; other factors mentioned include additional training and reduced administration (**Table 6**). Most general dentists (85%) received their training in treating PSHCNs in undergraduate dental school and 40% reported taking continuing education in this area. Most pediatric dentists (95%) received training in caring for PSHCNs during their specialty training and 29% reported taking continuing education in treating PSHCNs (**Table 7**).

Discussion

This study gathered substantial information regarding the involvement of Ontario's general and pediatric dentists in caring for PSHCNs. From this study, it appears that most do provide care for PSHCNs.

The 52% response rate is consistent with that found in the most current surveys of dentists.[14] However, the inability to collect data from 48% of the general dentists surveyed represents a major limitation.[15] The results of the survey are based solely on those who responded and may be biased in favour of dentists who choose to treat PSHCNs.

Table 6 Factors that would motivate greater provision of care for PSHCNs

Factor	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Increased compensation	277 (52.9)	38 (45.8)
Additional training[a]	174 (33.2)	6 (7.2)
Nothing	86 (16.4)	12 (14.5)

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).

Table 7 Level of training in caring for PSHCNs

Level of training	General dentists (%) (*n* = 524)	Pediatric dentists (%) (*n* = 83)
Undergraduate dental school[a]	446 (85.1)	34 (41.0)
Advanced dental specialty training[a]	59 (11.3)	79 (95.2)
Hospital-based general practice residency[a]	84 (16.0)	41 (49.4)
Continuing education	207 (39.5)	24 (28.9)

PSHCNs = patients with special health care needs.
[a]Significant difference between groups, p < 0.05 (chi-square test).

The large percentage (88.9%) of general dentists who reported treating PSHCNs may be an overrepresentation of the actual delivery of care, due to the survey design. Because this question allowed only a yes or no response, a dentist could have seen only 1 PSHCN in the course of a year and still responded truthfully that he or she treats PSHCNs. Future surveys should try to quantify the number of PSHCNs dentists treat on a weekly basis or as a percentage of their practice. Moreover, respondents may have overstated their involvement in the provision of care to PSHCNs because of concerns regarding professional perceptions.

Of the general dentists, 85% received their training in treating PSHCNs in undergraduate programs, whereas pediatric dentists received their training in their specialty programs. In a 2001 survey, only 10% of the responding dentists reported seeing children with special needs often or very often, and only 25% had hands-on experience with children with special needs in dental school.[16] Over half of dental schools provide less than 5 hours of didactic training in special needs dental care and almost three-quarters devote less than 5% of clinic time to care of PSHCNs.[16]

A recent study demonstrated that pediatric dentists in private practice are actively involved in managing PSHCNs.[17] Unfortunately, there are only about 100 practising pediatric dentists in Ontario. Therefore, one may infer that the majority of the 1.5 million PSHCNs in Ontario must receive their dental care from general dentists and that undergraduate programs are providing most training in this area of special care dentistry.

Nearly 40% of general dentists reported taking continuing education in the delivery of care to people with disabilities and a significant number would be more motivated to provide additional care to PSHCNs if they had additional training. General dentists may be unsatisfied with their level of training in treating PSHCNs and wish to remedy the situation through continuing education. In contrast, most pediatric dentists reported that they received their training in treating PSHCNs during their specialty program and additional training would not motivate them to provide further care to this population.

The study shows that older, more experienced dentists who graduated 20–30 years ago are just as willing to treat PSHCNs as younger, less experienced dentists who graduated within the last 10 years (91.1% and 90.1% reported treating PSHCNs, respectively). This is contrary to Milnes' finding in Manitoba where younger, less experienced dentists were more willing than their older, more experienced colleagues to treat PSHCNs.[18]

Most pediatric dentists only provide care to children and adolescents, whereas general dentists see PSHCNs of all ages (**Table 2**). Many of the PSHCNs seen by pediatric dentists have either congenital conditions or conditions that were acquired during childhood and require specialty care. In contrast, general dentists tend to see more adults with special needs who present with conditions or disabilities that develop as one ages, such as stroke, dementia and failing organ systems. Adults with special needs may be more comfortable in a general dental office environment than in a pediatric office. This is consistent with the current trend to ensure that PSHCNs are included in the mainstream of society.

General dentists provide more typically adult dental care to their patients than pediatric dentists. This includes fixed and removable prosthodontics, crowns, periodontal procedures and endodontics therapy. Pediatric dentists tend to provide more preventive procedures (**Table 3**).

It may appear surprising that survey respondents did not report more patients with common special health care needs like asthma and heart disease in their practice. However, the survey specified that cardiac conditions had to be serious (uncontrolled, function limited, cyanotic, congenital defect, post-transplant or with a pacemaker) and that asthma had to be considered severe.

Conclusions

The pediatric dental office, if available, becomes the dental home of children with special needs until they become adult, at which time they are discharged to the

community for continued care by the general dentist. However, the limited numbers of pediatric dentists in Ontario likely means that the general dentist is the dental home for most PSHCNs. From this study, it appears that there is an adequate number of general dentists in Ontario willing to provide continuing care to PSHCNs. However, these results likely do not reflect the reality of limited access to dental care experienced by PSHCNs. The results may be inaccurate because of question design flaws and responder bias among the 52% of surveyed general dentists who returned their questionnaires. Finally, it seems that access to care would be improved if reimbursement were increased to reflect the current costs of practice.

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Appendix A Questionnaire simulacrum

1. Do you treat persons with special health care needs?
   1 Yes
   2 No

2. What age of persons with special health care needs do you treat?
   1 18 years old and under
   2 18+ years old
   3 All ages

3. Please mark the types of special health care needs that exist among your patients.
   1 Arthritis – severe
   2 Asthma – severe
   3 Autism
   4 Cancer – active
   5 Liver (active hepatitis B, C, cirrorhosis)
   6 Cerebral palsy
   7 Craniofacial anomaly
   8 Diabetes – severe
   9 Stroke (with impairment)
   10 Down syndrome
   11 Other syndromes
   12 Major psychiatric disorder
   13 Multiple allergy syndrome
   14 Cardiac (uncontrolled, function limited, cyanotic, congenital defect, post-transplant, pacemaker)
   15 Neuromotor disease (muscular dystrophy, multiple sclerosis, Parkinson's)
   16 Hearing impaired – deaf
   17 Hemophilia – bleeding disorders
   18 Immunosuppression
   19 Leukemia (active or past history)
   20 Major organ transplant recipient
   21 Developmental delayed – mild, moderate or severe
   22 Renal disease on dialysis (home or hemodialysis)
   23 Spinal cord injury/wheelchair-bound
   24 Visually impaired – blind
   25 Alzheimer's /senile dementia
   26 Active HIV infection – AIDS
   27 Seizure disorder – poor/moderate/controlled
   28 Acquired brain injury
   29 Other (specify _____)

4. What type of dental services do you provide to persons with special health care needs?
   1 Examination
   2 Radiograph (intraoral)

3 Radiograph (panoramic)
4 Topical fluoride
5 Scaling
6 Restorative
7 Crown and bridge
8 Partial/full denture
9 Periodontics
10 Endodontics
11 Oral surgery
12 Orthodontics
13 Sealants
14 Oral hygiene instruction
15 Other (specify _____)

5. Do you treat persons with special health care needs whose dental care is paid through the government program Ontario Works (OW)?
   1 Yes
   2 No

6. Do you treat persons with special health care needs whose dental care is paid through the government program Ontario Disability Support Program (ODSP)?
   1 Yes
   2 No

7. Do you treat persons with special health care needs whose dental care is paid through the government program Children in Need of Treatment (CINOT)?
   1 Yes
   2 No

8. Year of graduation from dental school: _____

9. Gender
   1 Male
   2 Female

10. What would motivate you to provide increased care to persons with special health care needs?
    1 Increased compensation
    2 Additional training
    3 Nothing would motivate me
    4 Other (specify _____)

11. What level of training have you had in providing care for persons with special health care needs?
    1 Undergraduate dental school
    2 Advanced dental specialty training
    (describe specialty _____)
    3 Hospital-based general practice residency
    4 Continuing education course(s)