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# Practice Trends and Job Satisfaction of Dental Therapists in Canada: Results from a National Survey

Mohmmad Saad Khawer, Trish Goulet, Doug Brothwell and Keith Da Silva 

College of Dentistry, University of Saskatchewan, Saskatoon, SK, Canada

## ABSTRACT

The objective of this research was to evaluate the practice trends, clinical services and job satisfaction of dental therapists in Canada. Licenced Canadian dental therapists were recruited to participate in this cross-sectional study. A total of 124 dental therapists completed the survey (~68% response rate), with 57.3% of respondents being over the age of 50. Most respondents were actively engaged in full-time clinical practice in private dental offices. Indigenous dental therapists were significantly more likely to work outside of private dental offices providing care for Indigenous communities. Just over half of respondents were compensated by an annual salary, with the highest proportion of full-time practitioners earning between \$75,000 and \$99,000 per year. Dental therapists who were active in clinical practice performed a wide range of preventive, diagnostic, and treatment services consistent with their scope of practice. This research demonstrates that Canadian dental therapists are highly engaged and satisfied with their profession. Dental therapists can facilitate improved access to oral health care in less accessible areas of Canada; however, compensation packages and incentives to work in these less accessible areas must be addressed, as well as legal and regulatory requirements to ensure that dental therapists are licenced providers throughout Canada.

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## Introduction

Oral health is an important component of overall health and well-being [1]; however, equitable access to oral health care remains a challenge in Canada particularly for Indigenous people living in rural and remote locations [2]. The most recent national data from the First Nations Oral Health Survey (FNOHS) demonstrates that the oral health status of First Nations Canadians is poor across a range of clinical oral health indicators (e.g. dental caries, periodontal disease) when compared to the findings for non-Indigenous Canadians [3]. Historically, the Canadian workforce model for dental therapists was viewed as an alternate way to finance and deliver oral health care to less accessible areas of the country [4]. At the behest of the Federal government, the first dental therapy training programmes were established in Canada in the 1970s, with the aim of developing mid-level oral health care providers who could provide a targeted response to meet the needs of Indigenous and less accessible communities [4,5]. For decades, dental therapists in Canada have provided quality cost-effective care, with a high level of public acceptance [6–8]. However, in 2011, due to political and

economic factors, the last remaining dental therapy school in Canada was closed [5]. Currently, it is estimated that fewer than 200 dental therapists work in Canada, many of whom have migrated away from remote communities to private practices in larger cities [6]. This has resulted in a shortage of oral health care providers in rural and remote regions of Canada [5].

Dental therapists are unique and valuable members of an oral health care team that works to promote oral health and prevent disease [7–11]. In Canada, the scope of practice for a dental therapist may include caries diagnosis, prevention, restorative dentistry, pulp therapy, simple extractions, and space maintenance. Relative to other oral health care professionals in Canada, this allows them to perform more clinical procedures than dental assistants, and dental hygienists, but not to the same level and scope as dentists and dental specialists. Currently, dental therapists can only practice in British Columbia, Saskatchewan, the Northwest Territories, Yukon, Nunavut, or through Federally funded programmes reaching Inuit and First Nations communities. To-date, there have been limited studies focusing on the workforce practice trends and

**CONTACT** Keith Da Silva  [keith.dasilva@usask.ca](mailto:keith.dasilva@usask.ca)  College of Dentistry, University of Saskatchewan, 107 Wiggins Road, Saskatoon, SK S7N5E4, Canada

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job satisfaction of dental therapists in Canada. A review by Uswak et al. used administrative data to report on practice location, practice type (private versus public), and income [6]. It was noted in this report that over 80% of the dental therapy workforce was based in Saskatchewan, and the majority were also working in private practice. The average income for dental therapists was variable but ranged between \$55,000 and \$95,000 CAD [6]. Additionally, the review highlighted what is an ageing workforce, a problem compounded by the absence of an educational programme providing new graduates to the profession [6].

There were no specific findings related the nature and volume of clinical services being provided by Canadian dental therapists. There are, however, studies that have examined detailed workforce practice trends and job satisfaction for dental therapists internationally. A older cross-sectional study from the United Kingdom by Gibbons et al. revealed that most dental therapists were employed in clinical roles and perform a limited range of treatments including simple restorations, prevention, and oral hygiene maintenance [12]. Additionally, most of the respondents reported a high level of job satisfaction [12]. However, a different survey by Csikar et al. revealed that many dental therapists in the United Kingdom mainly perform preventive and oral hygiene maintenance related tasks and felt that they did not have the opportunity to use the full scope of their skills [13]. A more recent study from the United States by Blue et al. reports that dental therapists are treating a high number of both uninsured and underinsured patients, suggesting that they are improving access to oral health care in rural and metropolitan areas of Minnesota [14]. Additionally, another recent survey by Luo et al. revealed that dental therapists in Minnesota were generally highly satisfied with their employment; however, they felt that their practice was limited by factors such as educational requirements, scope of practice, and prescribing rights [15].

In 2022, the Federal Government of Canada announced its support for a new dental therapy educational programme which will be run collaboratively through a partnership between the University of Saskatchewan's College of Dentistry, the Northern Inter-Tribal Health Authority (NITHA), Saskatchewan Polytechnic, and Northlands College. This new programme, which will launch in the fall of 2023, will be the only dental therapy programme in Canada. As there is limited comprehensive data available regarding dental therapists in Canada, a baseline understanding of the current workforce profile was required. Exploring the current practice trends and job satisfaction of existing dental therapists will lead to a better understanding

of the capacity of the current workforce, as well as the unique needs of those working in the profession. Thus, the purpose of this cross-sectional study is to document the practice demographics, practice trends, and job satisfaction of dental therapists currently employed in Canada. The findings of this study will provide an insight on the future of dental therapy in Canada.

## Methods

This cross-sectional quantitative study follows the STROBE checklist for cross-sectional studies and was approved by the University of Saskatchewan Behavioral Research Ethics Board (REB ID #3554). Dental therapists were recruited to participate in this study through the Saskatchewan Dental Therapists Association (SDTA) and the Canadian Dental Therapists Association (CDTA) and were only eligible for the study if they had an active membership. Considering the estimated 180 actively practicing dental therapists in Canada, along with a 95% confidence interval and 5% margin of error, the sample size calculation estimated that a minimum of 123 participants were required for this study. Participant recruitment and data collection occurred between August and October 2022 with individual emails which contained a survey link distributed at launch and again as a reminder after 4 weeks.

A 41-item questionnaire was developed based on a review of the literature [6,12–14,16–19], and the research teams a priori knowledge of the subject. The questionnaire assessed basic demographic characteristics, employment characteristics, clinical practice characteristics (for those actively engaged in clinical practice), and employment and professional satisfaction. The remoteness of location of primary dwelling was established by comparing a patient's postal code to the Postal Code Conversion File (PCCF 2019) from Statistics Canada as described by Subedi et al. [20]. Briefly, the remoteness index (RI) is determined by estimating the distance between a primary address and any population centres in a given area. As described, remoteness is then further divided into five categories based on RI score; easily accessible area (RI score < 0.1500); accessible area (RI score 0.1500 to 0.2888); less accessible area (RI score 0.2889 to 0.3898); remote area (RI score 0.3899 to 0.5532); and very remote area (RI score > 0.5532) [20]. A five-point Likert-type scale was used for the questions regarding employment and professional satisfaction where participants indicated where they "strongly disagree", "disagree", "neither agree nor disagree", "agree", or "strongly agree" with a given statement. For the purposes of

analysis, the responses “strongly disagree” and “disagree” were combined into one variable. Similarly, responses for “agree” and “strongly agree” were also combined into one variable. After pilot-testing and refining the survey questions, an electronic questionnaire (SurveyMonkey®) was distributed via email. Each participant was guided through the informed consent process, and consent was recorded prior to starting the questionnaire.

Questionnaire responses were exported from SurveyMonkey® into Microsoft Excel and subsequently cleaned and coded. A quality check using a random sample of surveys was conducted to check for any potential data entry errors. To describe our sample population, we used proportions and absolute numbers for categorical variables, and means and standard deviations for continuous variables. Differences in practice characteristics were assessed based on practice type which included private practice (general or speciality practice) and other practice (public or community clinic, and First Nation clinical practice). To assess differences in practice characteristics, Chi-squared tests and Fisher exact tests (when one or more of the sample data points in a set was less than five) were used. The significance level was set at 0.05. All data analyses were performed using Statistical Package for the Social Sciences (SPSS) v.23.

## Results

A total of 124 dental therapists responded to the survey for an approximate response rate of 68%. Basic demographic data for the sample population is presented in Table 1. Over half of the respondents (57.3%) were over the age of 50, with the majority (96.0%) being female. Additionally, 40.4% of respondents identify as Indigenous (either status or non-status), which represented the largest proportion as it relates to cultural background. The geographic distribution of dental therapists was also limited, with the majority (70.2%) identifying Saskatchewan as their primary residence, and 66.1% indicating that they live in easily accessible areas with less than 10% indicating they live in remote or very remote areas. Of note, nearly half of the respondents (42.7%) graduated from their dental therapy education programme prior to 1990.

A summary of employment characteristics for Canadian dental therapists is presented in Table 2. Most respondents indicated that they were employed, with 52.4% working full-time. Approximately 64% were employed in private practice (general or speciality), with 74.2% indicating that they were primarily involved in providing direct patient care. Just over half of the

respondents (53.2%) indicated that they were compensated through an annual salary, with the highest proportion of respondents who were working full-time earning between \$75,000 and \$99,000 per year.

The following clinical practice characteristics were reported by dental therapists actively engaged in practice, with additional details available in Table 3. Most dental therapists (74.7%) who indicated that they were in active practice were working in only one dental office. The mean time spent in clinical practice was  $35.39 \pm 8.05$  hours per week, with an average of  $32.21 \pm 6.39$  patients being treated per week, most of which ( $22.72 \pm 5.94$ ) were paediatric patients. For diagnostic services, respondents indicated that they were providing a wide range of services; however, the most common (>80% of respondents) were recall examinations, emergency examinations, and taking radiographs. For preventive services, the most common (>80% of respondents) services included dental prophylaxis,

**Table 1.** Demographic characteristics, n (%) or mean  $\pm$  SD.

Total Sample (n)	124
<b>Age</b>	
30–39	24 (19.4)
40–49	29 (23.4)
50–59	39 (31.5)
60 or older	32 (25.8)
<b>Gender</b>	
Female	119 (96.0)
Male	5 (4.0)
<b>Cultural background</b>	
African	2 (1.6)
Canadian	35 (28.2)
European	29 (23.4)
East Asian	3 (2.4)
Indigenous (First Nations, Metis, Inuit)	39 (31.5)
Indigenous (Non-status)	11 (8.9)
Prefer not to answer	5 (4.0)
<b>Location of primary residence</b>	
Saskatchewan	87 (70.2)
Manitoba	21 (16.9)
All other Canadian locations	10 (8.1)
Prefer not to answer	6 (4.8)
<b>Remoteness of primary residence</b>	
Easily accessible area	82 (66.1)
Accessible area	21 (16.9)
Less accessible area	8 (6.5)
Remote area	10 (8.1)
Very remote area	3 (2.4)
<b>Year of graduation (Dental Therapy)</b>	
1970–1979	20 (16.1)
1980–1989	33 (26.6)
1990–1999	32 (25.8)
2000–2009	35 (28.2)
2010–2019	4 (3.2)
<b>Years in active practice</b>	26.66 $\pm$ 4.64
<b>Additional degrees</b>	
Dental Assisting	20 (16.1)
Dental Hygiene	35 (28.2)
Bachelors/Masters/PhD	5 (4.0)
None	64 (51.6)
<b>Considering an additional degree</b>	
Yes	25 (20.2)
No	99 (79.8)

**Table 2.** Employment characteristics ( $n = 124$ ),  $n$  (%).

<b>Current employment status</b>	
Employed, working full-time	65 (52.4)
Employed, working part-time	42 (33.9)
Retired	14 (11.3)
Not able to work	3 (2.4)
<b>Primary employment location</b>	
Private practice	79 (63.7)
Public Community-clinic practice	12 (9.7)
First Nation clinic practice	18 (14.5)
Non-clinical health promotion/teaching/governmental	15 (12.1)
<b>Primary employment responsibility</b>	
Direct patient care	92 (74.2)
Practice or program management	6 (4.8)
Teaching	5 (4.0)
Community-based health promotion and disease prevention	8 (6.5)
Prefer not to answer	3 (2.4)
<b>Annual dental therapy related income (Employed, working full-time)</b>	
Less than 49,999	1 (1.5)
50,000–74,999	14 (21.5)
75,000–99,999	39 (60.0)
Greater than 100,000	11 (16.9)
<b>Annual dental therapy related income (Employed, working part-time)</b>	
Less than 34,999	17 (40.5)
35,000–49,999	14 (33.3)
50,000–74,999	9 (21.4)
75,000–99,999	2 (4.8)
<b>Compensation structure</b>	
Annual salary	66 (53.2)
Percentage of production/collection	38 (30.6)
Hourly rate	20 (16.1)

**Table 3.** Clinical practice characteristics ( $n = 95$ ),  $n$  (%) or mean  $\pm$  SD.

Total currently in active practice	95
<b>Number of practice locations</b>	
1	71 (74.7)
2 or more	24 (25.3)
<b>Diagnostic services provided (select all that apply)</b>	
New patient examinations	53 (55.8)
Recall patient examinations	83 (87.4)
Emergency examinations	81 (85.3)
Caries risk assessment	69 (72.6)
Taking radiographs	86 (90.5)
Taking impressions	33 (34.7)
<b>Preventive services provided (select all that apply)</b>	
Dental prophylaxis	87 (91.6)
Scaling	69 (72.6)
Topical fluoride application	90 (94.7)
Dental sealants	92 (96.8)
Oral health education	81 (85.3)
Oral hygiene instruction	89 (93.7)
Diet and nutrition counselling	53 (55.8)
Tobacco/Smoking cessation counselling	25 (26.3)
Silver diamine fluoride application	69 (72.6)
Space maintenance	53 (55.8)
<b>Treatment services provided (select all that apply)</b>	
Temporary palliative restorations	67 (70.5)
Preventive resin restorations	78 (82.1)
Minimally invasive restorations (ATR/IST/IRT)	53 (55.8)
Amalgam restorations	61 (64.2)
Composite resin restorations	86 (90.5)
Glass ionomer cement restorations	56 (58.9)
Stainless steel crowns	73 (76.8)
Pulpotomies	81 (85.3)
Simple extractions	87 (91.6)

topical fluoride application, placing dental sealants, oral health education, and oral hygiene instruction. Lastly, as it relates to treatment services, the most common (>80% of respondents) services included preventive resin restorations, composite restorations, pulpotomies, and stainless-steel crowns. Only 64.2% indicated that they were placing dental amalgams.

The aggregate responses related to employment and professional satisfaction are presented in Table 4. Most respondents were satisfied with their current employment responsibilities (73.9%) as well as with the potential employment opportunities available to them (60.9%). Dental therapists also responded positively when considering their scope of practice (69.6%) and autonomy (69.5%). However, most respondents also indicated that they are worried about the future of dental therapy in Canada (75.0%), and also wished that they had more independence in their practice (75.1%). Dental therapists also felt strongly that they have an important voice in shaping Canadian oral health care (89.6%).

A comparison of clinical practice characteristics between dental therapists who were in private practice (general or speciality) and those who were in other types of practice are presented in Table 5. Dental therapists in private practice reported significantly higher income levels than those who were in other types of practice. For diagnostic services, dental therapists in private practice were significantly more likely to be doing new examinations, whereas dental therapists in other types of practice were significantly more likely to be doing caries risk assessments. For prevention services, dental therapists in private practice were significantly more likely to be scaling and placing space maintainers, whereas dental therapists in other types of practice were significantly more likely to be offering diet and nutrition counselling and using silver diamine fluoride. Finally, when analysing treatment services,

dental therapists in private practice were significantly more likely to be placing composite restorations, whereas dental therapists in other types of practice were significantly more likely to be placing temporary palliative restorations, amalgam restorations, and glass ionomer cement restorations.

## Discussion

In context of a new dental therapy education programme launching in Canada, this cross-sectional study seeks to describe the current practice patterns and job satisfaction of dental therapists in Canada. The findings indicate that the current workforce is ageing with a majority of actively practicing dental therapists situated in private practice. Dental therapists who are actively engaged in clinical practice are delivering services consistent with their full scope of practice. However, notable differences exist between services provided by those in private practice compared to those who are based in public or community clinics/programmes, particularly as it relates to prevention and materials used.

Consistent with one of the founding principles of dental therapy in Canada, to improve access to care for Indigenous communities [4,5], status and non-status Indigenous individuals made up just over 40% of the total workforce. Those who identified as Indigenous (status or non-status) were more likely to be practicing outside of private practice in community-based clinics or through Federal programmes that provide services to First Nations communities in less accessible areas of Canada. This suggests that Indigenous dental therapists are more likely to make an impact on improving access to care for more rural and remote regions of Canada which are typically underserved. With the closing of the last remaining Canadian dental therapy training programme in 2011,

**Table 4.** Analysis of responses related to employment and professional satisfaction ( $n = 124$ ), %.

	Disagree/Strongly Disagree (%)	Neither Agree nor Disagree (%)	Agree/Strongly Agree (%)
I am satisfied with my current employment responsibilities	2.2	23.9	73.9
In my current employment setting, I am able to practice the full scope of dental therapy	8.7	21.7	69.6
I feel satisfied with the current amount of continuing education opportunities that are available to me	21.8	21.7	56.5
I feel satisfied with the current level of autonomy I have when providing patient care	13.0	17.4	69.5
I feel confident that I am delivering evidence-based oral health care	4.4	13.0	82.6
I feel that dental therapists are valued members of the oral health care team	8.3	4.2	87.6
I feel fairly compensated for the services that I provide	26.6	15.6	57.8
I am worried about the future of dental therapy in Canada	10.4	14.6	75.0
I feel that dental therapists have an important voice in Canadian oral health care	6.3	4.2	89.6



**Table 5.** Variable differences based on practice type ( $n = 95$ ),  $n$  (%).

Independent variables	Practice Type		$\chi^2$ Value	df	p-value
	Private Practice	Other			
<b>Annual dental therapy related income</b>					
Less than 34,999	6 (10.0)	7 (20.0)			
35,000–49,999	6 (10.0)	9 (25.7)			
50,000–74,999	10 (16.7)	7 (20.0)	9.90	4	0.042* <sup>†</sup>
75,000–99,999	29 (48.3)	7 (20.0)			
Greater than 100,000	9 (15.0)	5 (14.3)			
<b>Cultural background</b>					
Indigenous (First Nations, Metis, Inuit, and non-status)	33 (55.0)	29 (82.9)	7.568	1	0.005* <sup>†</sup>
Non-Indigenous	27 (45.0)	6 (17.1)			
<b>New patient examinations</b>					
Yes	41 (68.3)	12 (34.3)	10.34	1	0.001* <sup>†</sup>
No	19 (31.7)	23 (65.7)			
<b>Caries risk assessment</b>					
Yes	39 (65.0)	30 (85.7)	4.77	1	0.029* <sup>†</sup>
No	21 (35.0)	5 (14.3)			
<b>Taking radiographs</b>					
Yes	54 (90.0)	32 (91.4)	-	1	0.279 <sup>‡</sup>
No	6 (10.0)	3 (8.6)			
<b>Taking impressions</b>					
Yes	12 (20.0)	21 (60.0)	15.60	1	0.000* <sup>†</sup>
No	48 (80.0)	14 (40.0)			
<b>Scaling</b>					
Yes	54 (90.0)	15 (42.9)	24.71	1	0.000* <sup>†</sup>
No	6 (10.0)	20 (57.1)			
<b>Topical fluoride application</b>					
Yes	58 (96.7)	32 (91.4)	-	1	0.354 <sup>‡</sup>
No	2 (3.3)	3 (8.6)			
<b>Diet and nutrition counselling</b>					
Yes	25 (41.7)	28 (80.0)	13.17	1	0.0002* <sup>†</sup>
No	35 (58.3)	7 (20.0)			
<b>Tobacco/Smoking cessation counselling</b>					
Yes	11 (18.3)	14 (40.0)	5.351	1	0.021* <sup>†</sup>
No	49 (81.7)	21 (60.0)			
<b>Silver diamine fluoride application</b>					
Yes	36 (60.0)	33 (94.3)	-	1	0.0002* <sup>‡</sup>
No	24 (40.0)	2 (5.7)			
<b>Space maintenance</b>					
Yes	47 (78.3)	6 (17.1)	33.56	1	0.000* <sup>†</sup>
No	13 (21.7)	29 (82.9)			
<b>Temporary palliative restorations</b>					
Yes	38 (63.3)	29 (82.9)	4.053	1	0.044* <sup>†</sup>
No	22 (36.7)	6 (17.1)			
<b>Minimally invasive restorations</b>					
Yes	38 (63.3)	15 (42.9)	3.757	1	0.052 <sup>†</sup>
No	22 (36.7)	20 (57.1)			
<b>Amalgam restorations</b>					
Yes	32 (53.3)	29 (82.9)	8.38	1	0.003* <sup>†</sup>
No	28 (46.7)	6 (17.1)			
<b>Composite resin restorations</b>					
Yes	60 (100.0)	26 (74.3)	-	1	0.000* <sup>‡</sup>
No	0 (0.0)	9 (25.7)			
<b>Glass ionomer cement restorations</b>					
Yes	30 (50.0)	26 (74.3)	5.387	1	0.020* <sup>†</sup>
No	30 (50.0)	9 (25.7)			
<b>Simple extractions</b>					
Yes	54 (90.0)	33 (94.3)	-	1	0.545 <sup>‡</sup>
No	6 (10.0)	2 (5.7)			

\*Significance at 0.05 level; <sup>†</sup> Chi-squared test; <sup>‡</sup> Fisher's exact test;  $\chi^2$  = Chi-square; df = degrees of freedom.

the results of this study also confirm declining workforce numbers. Estimates for the total number of dental therapists in Canada had declined from a peak at 365 in 1990 to 283 in 2005 [4]. Current best estimates suggest the active workforce is now less than 200. The majority of respondents also working in more accessible areas or major population centres, indicating a need to revisit recruitment, training, and employment opportunities that will support future dental therapists to work in rural and remote regions where access to care remains a challenge. Nearly 60% of the sample population for this study was over the age of 50, with no respondents being under the age of 30. Additionally, nearly 70% graduated in the 1990s or earlier. As such, there are more dental therapists closer to retirement than in the early stages of their career. In 2008, there was a high (67.1%) vacancy rate for dental therapists in the northern territories of Canada [6]. Due to the ongoing attrition of dental therapists over the last 15 years, it is anticipated that this gap will have increased. A new cohort of dental therapists set to begin their studies in 2023 will face a significant age and experience gap when they enter the workforce. They will need a coordinated effort to support their entry into practice.

Estimates for the income of dental therapists has historically ranged from \$55,000 to \$95,000 Canadian dollars [CAD], with variability based on location and practice type [6]. Consistent with previous research, the highest proportion of respondents in this study reported an annual income between \$75,000 and \$90,000 CAD, with dental therapists working in private practice making significantly more than those working in other types of practice. Additionally, most dental therapists felt that they were fairly compensated for their services. It has been previously reported that an increasing number of dental therapists were beginning to migrate towards private practice and away from more rural and remote locations [4–6]. This can be explained in part by higher remuneration rates in private practice as confirmed in this study, as well as through a decrease in the availability of employment through publicly funded programmes such as the Saskatchewan Children's Dental Plan [5,21]. To have a measurable impact on improving access to oral health care, it has been suggested that dental therapists are best utilised by focusing on work in the public sector [17]. However, for this to be realised, the gap in compensation between private and public practices will need to be addressed, particularly when the cost of living is factored in, which can be higher in Northern areas of Canada [6].

Dental therapists currently in active practice in Canada are providing a wide variety of diagnostic,

preventive, and treatment services consistent with other countries [14,18,22]. However, there were some notable differences to highlight between those working in private practice and those in a publicly or community-based practice. For example, dental therapists in a publicly funded practice were more likely to be doing caries risk assessment and diet/nutrition counselling. One reason for this discrepancy could be related to differences in the patient population served by each type of practice. Caries risk assessments and diet/nutritional counselling are also tasks which may not be reimbursed through a private insurance plan, so they may not have been widely adopted into a private practice environment. It is also possible that in private practice these tasks are delegated to other members of the oral health care team, allowing dental therapists to focus more on restorative dentistry.

Some of the most common treatment services provided by dental therapists include placing restorations, pulpotomies, stainless steel crowns, and simple extractions. This is very similar to the findings from Australia, New Zealand, the United Kingdom, and the USA [9,14,18,22]. While most treatments services offered by dental therapists in private practice were consistent with those in other types of practice, there were some notable differences. Significantly fewer dental therapists in private practice reported using amalgam. There are several possible explanations for this difference. Correa et al., noted several factors that influence the choice of restorative material including dental caries severity, characteristics of the caries (tooth number, size), and type of dental insurance [23]. There has also been an increasing public demand for esthetic restorations and increased public consideration for potential health issues associated with the mercury in amalgam [24]. Differences in patient demographics in each type of practice may partly explain the observed differences; however, further research is required related to the choice of restorative materials in a Canadian context. Additionally, dental therapists in private practice were less likely to use glass ionomer, place temporary restorations, and use silver diamine fluoride. When considering that dental therapists working in other types of practices are more likely to be in rural and remote areas, the use of temporary restorations and minimally invasive dentistry techniques could be representative of the broader challenge related to accessing care and a lack of providers able to provide more definitive care on a continuous basis.

In terms of job satisfaction (Table 4), most dental therapists were satisfied with their occupation and their current roles. Additionally, they were mainly satisfied with the employment opportunities that are



available to them. Most dental therapists felt that they are valued members of the oral health care team and that they have an important voice in Canadian oral health care. These findings suggest that the occupation is very motivated and are passionate about their chosen profession. Similar high levels of job and professional satisfaction have been noted in both the United Kingdom and the USA [12,13,19]. However, an important finding is that most individuals were also worried about the future of dental therapy in Canada. Considering that there is still resistance towards incorporating dental therapists as part of the oral health care team in most North American jurisdictions [5,16,25], it is understandable that this feeling of uncertainty still exists. Many of the existing workforce would have been present when various publicly funded dental therapy employment opportunities disappeared, and training facilities closed. With a commitment towards a new dental therapy educational institution in Canada, there is likely cause for optimism going forward. However, there will still be outstanding challenges related to the widespread recognition and licensure for dental therapists across Canada that will need to be addressed.

The findings from this cross-sectional study are strengthened by a high response rate, and the use of variables that are comparable to other jurisdictions. The results present a comprehensive picture of the current practice characteristics and job satisfaction for Canadian dental therapists. However, there are several limitations to this research that should be noted. Due to the cross-sectional study design, this research cannot make any inferences about temporality or causation. As with any voluntary survey, there is also a possibility of sampling bias with more highly motivated individuals likely to respond potentially affecting the results. Respondents may also have been subject to recall bias when trying to assess their practice patterns over a period of time. Lastly, while the survey distribution was aided by the SDTA and the CDTA was aimed to be comprehensive, it is possible that a small number of dental therapists were missed during the recruitment phase. Nevertheless, the findings from this research still offer insight into the current active dental therapy workforce which will contribute to a more robust understanding of the delivery of oral health care in Canada.

## Conclusion

Overall, dental therapists are important members of the oral health care team who provide quality care. There have been limited studies regarding dental therapists in Canada, and this research helps to

profile the practice characteristics of the existing workforce. Dental therapists in Canada are highly motivated and are satisfied with their profession. They provide a wide range of diagnostic, preventive, and treatment services; however, many have migrated towards private practice over time. While dental therapists may be part of the solution to improve access to oral health care to less accessible areas of Canada, compensation packages and/or incentives need to be addressed. Targeting Indigenous students to become dental therapists may increase the proportion of therapists practicing in Indigenous communities and subsequently improve access to care. While there is optimism in Canada around a new dental therapy educational programme, there is still much work to be done to ensure that dental therapists are recognised as licenced providers across all of Canada.

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## Data availability statement

The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

## Informed consent statement

All participants were guided through an informed consent process. Informed consent was recorded prior to data collection.

## Institutional review board statement

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the University of Saskatchewan Behavioural Research Ethics Board (REB ID #3554, date of approval 13 July 2022).

## ORCID

Keith Da Silva  <http://orcid.org/0000-0003-3708-5805>

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