Employer-Reported Dental Therapist Compensation in Minnesota

Karl Self, D.D.S., M.B.A., Danae Seyffer, M.D.T., Drew Christianson, M.D.T., Qi Wang, M.S., Phonsuda Chanthavisouk, M.D.T., B.S.D.H.

Introduction

Compensation is an important issue for any dental office. Not only are labor costs the largest component of a dental office's overhead, when it comes to managing a dental practice, compensation administration is also an area that can create perceived fairness issues among the staff. For many employees, their level of compensation is viewed as a symbol of their accomplishments as well as their value to their employer. For the employer, having an effective compensation system improves a business's "ability to attract qualified employees, retain valued employees, and improve work performance and efficiency."[1] Dental consultants and practice managers routinely attempt to link an office's compensation system to their staff's performance measures.

According to the American Dental Association, one way to support this performance culture is to ensure that all salary ranges, including those for new employees, reflect conditions and expectations for the market where they practice.[2] Thus, it should not be a surprise that potential Minnesota employers began asking questions about an appropriate level of compensation prior to hiring the first class of dental therapy graduates in 2011.

Background and History

The profession of dental therapy is more than 100 years old and is practiced in more than 50 countries, yet it is relatively new in the United States. In 2009, Minnesota was the first state to authorize the practice of dental therapy and there are currently 13 states in which dental therapists are authorized to practice. Minnesota authorized two levels of dental therapy practice: a Bachelor-prepared licensed dental therapist (DT), and a certified advanced dental therapist (ADT), which requires Master's level education and 2,000 hours of practice as a licensed DT.[3] Both levels of DTs work under the supervision of a licensed dentist. A primary difference is that a DT works under both indirect and general supervision, while the ADT can perform his or her full scope of practice under general supervision.

This survey provides a snapshot in time of Minnesota DT's compensation.

There are three educational programs in the state. The University of Minnesota (UMN) School of Dentistry (SOD) and Metropolitan State University (Metro) graduated their first classes in 2011. Minnesota State University Mankato (Mankato) is the newest program. They will graduate their first class in 2023. The number of graduates varies per year. However, UMN and Metro combined graduate an average of 14 students per year. Mankato's target is six students per year. There were 131 licensed DTs in Minnesota as of December 5, 2022.[4]

Compensation Equity

Economists have long suggested that the two most common ways organizations set their compensation levels are in relationship to what other organizations pay a given job position, known as external equity, and in relationship to what others within their own organization are paid, known as internal equity.[5] Unfortunately, since dental therapy is a new profession in the United States, there was no external market data to utilize. When looking to set a salary based on internal equity, the most common factors used are (1) job responsibility, (2) skill required by the job, ((3) effort required, and 4) working conditions.[5] Given that a DT is a member of the oral health care team who is educated to provide evaluative, preventive, restorative, and minor surgical dental care, it seemed appropriate to set their compensation level somewhere between a dentist and a dental hygienist.

In 2010, prior to the first DTs practicing in the state, an early effort was undertaken to determine an appropriate compensation level for DTs based on internal equity. The unpublished study utilized existing

Continued on next page

***Dr. Self, Ms. Seyffer, Mr. Christianson,** and **Ms. Chanthavisouk** are from the Department of Primary Dental Care, Division of Dental Therapy, School of Dentistry, University of Minnesota, Minneapolis, USA. Dr. Self's email is selfx001@umn.edu*

****Ms. Wang** is from the Clinical and Translational Science Institute, University of Minnesota, Minneapolis, USA.*

Continued from previous page

patient encounter data from a large health maintenance organization to analyze the effect the employment of a DT would have on clinic revenue and cost given different payor mixes. The analysis showed that a practice could financially support a DT salary that was between 50-65% of a dentist or between 100-135% of a dental hygienist. As more DTs entered the workforce, other surveys were undertaken in an attempt to better identify external equity for DT salaries. Although response rates for these surveys were too low to allow for meaningful statistical analysis, they did provide anecdotal information for stakeholders. A 2014 survey of dental therapy employers noted that nearly 70% of the respondents reported paying a salary of $35-$44 per hour. A 2015 survey sent to DTs found that 60% of respondents reported receiving a salary of $40-$49 per hour. Most recently, the published results of a 2020 survey, sent to DTs and facilitated by the Minnesota Dental Therapy Association, noted that the median income category for DTs was the equivalent of $39-$43 per hour, and was the equivalent of $44-$48 for ADTs.[6]

Other Factors

While previous surveys have shed some insight into salary ranges for dental therapists, they did not look at compensation as a whole, including non-wage benefits, nor did they look at factors associated with salary levels. Additionally, a review of the literature highlights that there are a number of different contributors to inaccurate self-reporting of income data.

Studies have found that the most common reasons for inaccurate self-reported data are the sensitive nature of discussing income in our society[7–9] and social desirability bias.[8,9] The issue of sensitivity has been noted as a major factor contributing to low response rates on survey topics such as compensation. Social desirability bias refers to our tendency to respond in ways that we feel are more appropriate or that will be viewed favorably by others.[10]

Although there have been many challenges in collecting dental therapy compensation data in the past, with more than 130 licensed dental therapists practicing in Minnesota, and with the state celebrating 10 years of dental therapy practice, it seemed appropriate to once again look to ascertain employer-reported salary compensation data for dental therapists. Thus, the aim of this study was to understand dental therapy compensation from employer-provided data.

Methods

Study design and development

The survey conducted (Study #00009472) was reviewed by the University of Minnesota (UMN) Institutional Review Board (IRB) and was determined as non-human research. The creation and distribution of the survey was completed through utilization of the Research Electronic Data Capture (REDCap) by the UMN Division of Dental Therapy faculty. It was comprised of 13 main questions, with additional questions asked based on the number of employees reported and the compensation method and benefit packages offered. The survey was comprised of three sections: (1) demographic information, including practice type, location, and size, (2) dental therapy compensation and benefits, and (3) dental hygiene compensation and benefits. The survey was estimated to take approximately 15 minutes to complete. Responses were collected for 12 weeks. Participants in the survey had the option to provide additional comments and feedback at the end of the survey.

Recruitment of study participants

A list of clinics employing dental therapy was collected by reviewing collaborative management agreements at the Minnesota Board of Dentistry. On October 2, 2020, a letter was mailed to these 93 clinics containing two documents: (1) a letter explaining the purpose of the study and requesting participation, and (2) an informed consent letter providing the link to the survey. It was requested that the employer or manager respond to the survey, not the dental therapist. To help increase response to the survey, the Minnesota Dental Therapy Association sent an email to all DTs with contact information to ask them to encourage their employers to fill out the survey. If the employers were interested, they could follow the instructions in the letter or email the study coordinator to receive a direct link to complete the survey.

Statistical Methods

Participants' demographics and survey responses were summarized using descriptive statistics. Cross tabulations and Chi-square tests (or Fisher's exact tests for sparse data) were conducted to examine factors that could potentially be associated with dental therapist compensation. Statistical analyses were performed in statistical software SAS version 9.4 (SAS Institute Inc., Cary, NC). P values of less than 0.05 were considered statistically significant.

Results

Demographics

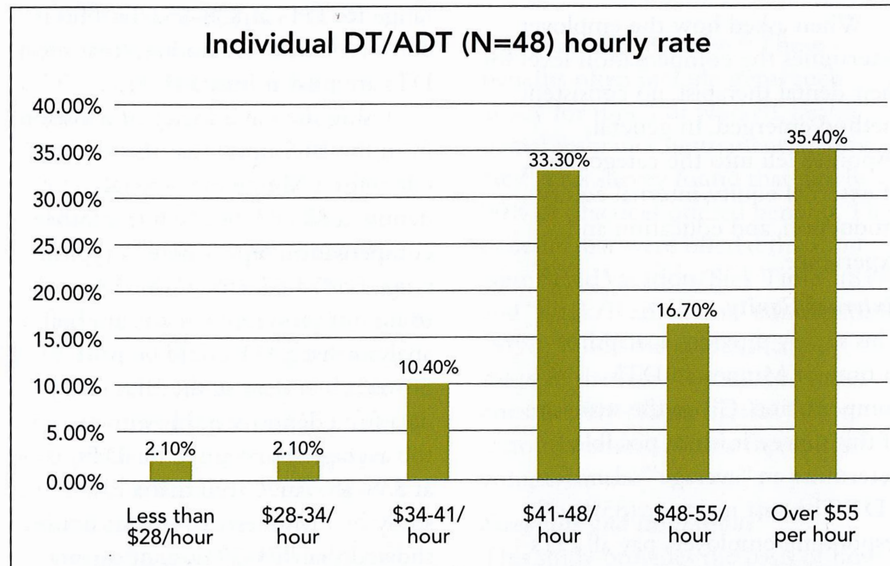
A total of 26 out of 93 clinics responded to the survey, with a response rate of 27.96%. Of these clinics, 15 (57.7%) were small group private practices, 6 (23.1%) were larger group private practices, 3 (11.5%) were federally funded clinics such as Community Health Centers/Federally Qualified Health Care Centers/Indian Health Service clinics (CHC/FQHC/IHS), and 2 (7.7%) were non-profit clinics. There were 48 DT/ADTs employed by the 26 clinics that responded to the survey. Table I describes the demographics in practice

TABLE 1
Response in percentages of dental practice (N=26) demographics

Dental practice demographics	N-26 (%)
Practice type	
Non-profit clinic	2 (7.7)
*CHC/FCHC/IHS	3 (11.5)
Small group private practice (1-4 DDS)	15 (57.7)
Large group private practice (5+ DDS)	6 (23.1)
Location	
Urban	9 (34.6)
Rural	15 (69.2)
How many dentists does your organization employ?	
1	6 (23.1)
2-4	10 (38.5)
5-10	5 (19.2)
16 or more	5 (19.2)
How many dental therapists does your organization employ?	
1	15 (57.7)
2	6 (23.1)
3	1 (3.8)
4	2 (7.7)
5+	2 (7.7)

LEGEND: Community Health Center (CHC), Federally Qualified Health Care Center (FQHC), Indian Health Services (IHS)

FIGURE 1
Individual DT/ADT (N=48) hourly salary range

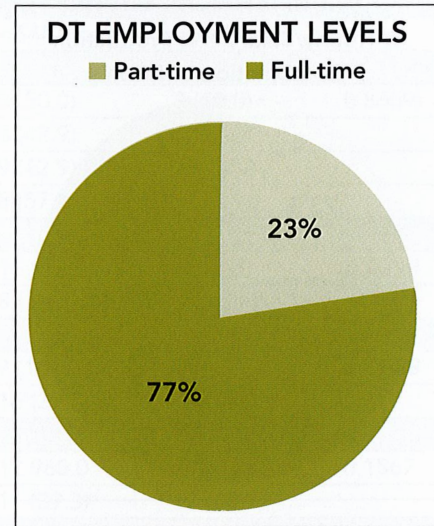


type, location, and how many dentists and dental therapists are employed in the dental practice.

Compensation

Dental therapist compensation varied dependent upon the following characteristics: practice type, location, ADT certification, dual licensure as dental hygienist, and value of fringe benefits. This survey identifies the dental therapist's salary based on hourly pay. The characteristics

FIGURE 2
Percentage of individually reported DT (N=48) employment levels



determined whether the DT/ADT's compensation was below or above average. Figure 1 illustrates the hourly pay range for an individual DT/ADT. Based on the survey completed by the employers, the hourly salary of $48/hour was the average pay. The pay ranges of $41-48/hour and more than $55/per hour had the highest percentage of respondents.

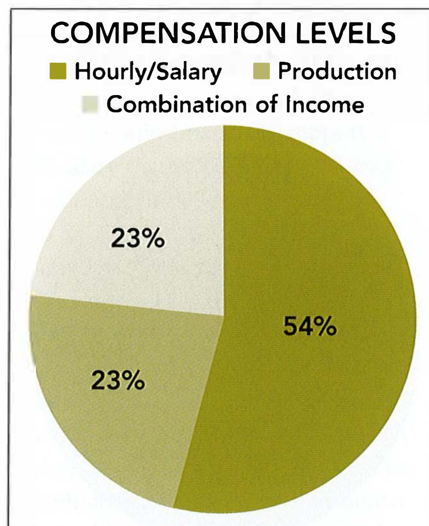
Utilizing the findings from Figure 1, Table II categorizes the number of dental therapists (N=48) who are compensated below/above average based on the listed characteristics of practice type, location, certification, licensure, and value of fringe benefits. There was statistical significance in the dental therapist's hourly pay based on the practice location of rural and not rural with a P value of 0.0214 and whether the DT was certified as an ADT with a P value of 0.0033.

In addition to the value of benefits offered, the majority of employers offered benefits specific to the following: 401k/retirement plan, vacation/sick time, continuing education contribution, dental insurance, medical insurance, liability

Continued on next page

Continued from previous page

FIGURE 3
Compensation method reported for individual DT (N=48)



insurance, life insurance, and other.

The respondents reported the status of each DT they employed as either part-time of fill-time. Figure 2 shows the percentages of individual DT employment levels.

Based on the survey responses, there were three methods of compensation reported for the DT. DTs were compensated based on hourly/salary rate, production, or a combination of base pay and production. Figure 3 reports the percentage of compensation methods for individual DTs.

Discussion

Utilization of dental therapists

Dental therapists are utilized in many different settings. While survey responses were received from different practice types and locations, there was a larger response from rural practices and small private practices. In January of 2022, 37% of practicing DTs were located in rural areas of Minnesota. In contrast, of those responding to the survey, 69% of the DTs practiced in a rural community (Table I). Similarly, in January 2022, 38% of DTs practiced in small private practices, as opposed to 58% of the DTs in this survey. This may be attributed to rural and small private practices having fewer employees and less internal equity issues. Thus, they tend to focus on external comparisons in order to attract/retain DTs to their practices.

Determining compensation

A look at how DTs are compensated reveals that a little more than half (54%) of the employers reported compensating solely on an hourly/salary basis. How a therapist is compensated appears to vary by clinic type. All federally funded clinics compensate their therapists on an hourly/salary basis, as opposed to 83% of other non-profit clinics, who favor a combination of a base salary plus production. Private practices were the only practice types that reported using production as a sole method of determining a therapist's compensation, with large practices evenly splitting between production and hourly/salary, and small practices utilizing all three methods.

When asked how the employer determines the compensation level for their dental therapist, no consistent method emerged. In general, responses fell into the categories of external equity, internal equity, production, and education and experience.

External Equity

This survey provides a snapshot in time of Minnesota DT's compensation. Given the structure of this survey, it is not possible to determine an "average" salary for a DT. The vast majority (85%) of responding employers pay all DTs more than $41/hour, with 71% of licensed-only DTs falling in the $41-$48/hour range, and 61% of certified ADTs being paid above $48/hour.

Internal Equity

Since Minnesota is still the only state where DTs are practicing in a variety of practice settings, it is appropriate to look at how these results compare to dental hygienist and dentist compensation in Minnesota. Respondent comments noted that their DT's salary was, in fact, slightly higher than their hygienist's salary.

Information from the U.S. Bureau of Labor and Statistics (BLS) noted that the average salary for a Minnesota hygienist in 2021 was $38.38/hour.[11] This data is consistent with information from a leading provider of compensation market data, which noted that the salary range for Minnesota hygienists typically falls between $33.18-$43.45/hr.[12] This is also consistent with the responses from employers responding to this survey, who all reported paying their dental hygienists between $26-$41/hour, with 73% reporting the pay in the $34-$41/hour range. Therefore, using our pre-employment internal analysis that a DT could be paid 100-135% of a hygienist, the BLS salary data would estimate the average salary range for DTs at $38-$52/hr. This is consistent with the findings that most DTs are paid at least $41/hr.

Using the same logic, information from the BLS notes that the average salary for a Minnesota general dentist is $87.38/hr,[11] while another compensation report notes a typical range of $74.67-$98.93/hr.[13] Again, using our pre-employment internal analysis that a DT could be paid 50-65% of a dentist, the BLS salary data for a dentist would estimate the average salary range for DTs at $38-$57/hr. Given that a case study of a Minnesota veterans home showed that "71-79% … of on-site procedures provided during the case study were within the scope of a … dental therapist",[14] the level of DT compensation compared to that of a dentist reinforces what numerous case studies have demonstrated:[14-19] that DT's are in fact cost effective.

Compensation factors

To look for factors that affect a therapist's compensation, we dichotomized the hourly pay ranges into less than $48/hr and $48/hr and above. As noted in Table II, only two factors showed statistical significance. Dental therapists receive higher compensation when they practiced in a rural area and when they were a certified ADT. For those practicing in a rural area, not only do 68% make more than $48/hr, 52% make more than $55/hr. Rural compensation may be higher due to the historical difficulty rural practices have had attracting dental providers. Additional research is needed to understand this better. Higher compensation for those certified as ADTs can be attributed to the fact that an ADT has a slightly larger scope of practice and, more importantly, can perform their full scope of practice under general supervision. This provides the practice with more flexibility and makes the ADT more valuable. As confirmation of this, 73% of respondents noted that there is additional compensation when advance certification is achieved.

Although not statistically significant, 60% of the dual-licensed DH/DTs earned less than $48/hr, while 61% of those only licensed as DTs earned more than $48/hr. This could be a result of the fact that since 2019, all new DTs are eligible for dual licensure, and therefore those who are only licensed as DTs have been practicing longer on average. Additional research is needed to understand this better.

Compensation systems in dental offices can be complex. In addition to determining whether an employee is paid a hourly/salary rate, on production, or a combination of a base plus production, a practice must also determine the level of benefits offered as part of an overall compensation package.[20] These benefits often include items such as pay for time not worked, health/dental insurance, retirement income, etc.[21] This survey found that nearly 90% of practices offered benefits. The benefits that were offered the most were "Paid Vacation/Sick Time" (81%) and "401k/Retirement" contributions (81%). While the approximate value of the benefit packages varies considerably (Table II), this factor is not correlated with a therapist's compensation.

TABLE 2
Individual dental therapist characteristics based on average compensation (N=48)

	Dichotomized	DT hourly pay	P value
DT characteristics	**<$48/hour**	**>$48/hour**	
Practice type			
Non-profit	3 (50.0)	3 (50.0)	0.8609)
*CHC/FCHC/IHS	3 (42.9)	4 (57.1)	
Small private practice clinic	9 (42.9)	12 (57.1)	
Large private practice clinic	8 (57.1)	6 (42.9)	
Location			
Urban	15 (65.2)	8 (34.8)	***0.0214***
Rural	8 (32.0)	17 (68.0)	
Certification			
Dental therapist	7 (100.0)	0 (0)	***0.0033***
Advanced dental therapist	16 (39.0)	25 (61.0)	
Licensure			
Dually liscensed as a dental hygenist	12 960.0	8 (40.0)	0.1567
Dental therapist/ADT only	11 (39.3)	17 (60.7)	
Value of fringe benefits			
<10%	8 (50.0)	8 (50.0)	0.7470
20-30%	10 (41.7	14 (58.3))	
>30%	1 (50.0)	` (50.0)	
Unsure/missing	4 (66.7)	2 (33.3)	

LEGEND: *Community Health Center (CHC), Federally Qualified Health Care Center (FQHC), Indian Health Services (IHS)
Italicized and bolded numbers show Statistical significance (p<0.0500)

Strengths and limitations

This study provides the basis of how dental therapy compensation in Minnesota has developed. Due to the novel role of the practitioner, there are still many unknown factors regarding compensation, including health economic trends, the role of benefits, and workforce shortages following the pandemic. Future research on DT compensation would benefit from a direct comparison of DT and dentist salaries within the same practices. Other limitations of the study include a small survey sample size due to the limited number of DTs and dental practices that employ DTs in Minnesota, demographics of respondents not mirroring the practicing population, the use of salary ranges, and the potential for response bias, with certain employers choosing not to respond.

Conclusion

This survey demonstrates that DTs work in a variety of dental practices and locations around Minnesota. It shows that they are compensated using various payment structures and that their compensation level reflects their scope of practice at a

Continued on next page

Feature

Continued from previous page

level between a dentist and a dental hygienist. The novel role of dental therapy requires knowledge of market based compensation in order to determine the cost effectiveness of this provider and to monitor economic viability. As the growth and expansion of the dental therapy profession continues, more data will be available to assess the financial impact of dental therapy.

Acknowledgment

This research was supported by the National Institutes of Health's National Center for Advancing Translational Sciences, grant UL1TR002494. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health's National Center for Advancing Translational Sciences.

We would like to thank Brian Wray as well as the Minnesota Dental Therapy Association for their assistance in preparing the surveys and for their help in connecting with dental therapy employers.

References

1. Fay CH, Wallace MJ. But it's not fair. In *Compensation Theory & Practice*. Pws Pub Co; 1983:3-23.
2. Managing performance: Staff compensation. American Dental Association. https://www.ada.org/resources/practice/practice-management/20_compensation
3. Self K, Brickle C. Dental therapy education in Minnesota. Am J Public Health 2017;107(S1):S77-S80. doi:10.2105/AJPH.2017.303751
4. Active Licensee Totals. Minnesota Board of Dentistry; 2022:1. Accessed December 5, 2022. https://mn.gov/boards/dentistry/consumers/active-licenses/
5. Fay CH, Wallace MJ. Internal Equity. In *Compensation Theory & Practice*. Pws Pub Co; 1983:46-67.
6. Luo YL, Simon L, Leiviska K, Seyffer D, Friedland B. A survey of dental therapists' practice patterns and training in Minnesota. J Am Dent Assoc 2021;152(10):813-821. doi:10.1016/j.adaj.2021.05.004
7. Moore JC, Stinson LL, Welniak EJ. Income measurement error in surveys: A review. U S Census Bur. Published online October 8, 2021:34.
8. Hariri JG, Lassen DD. Income and outcomes. Public Opin Q 2017;81(2):564-576. doi:10.1093/poq/nfw044
9. Angel S, Disslbacher F, Humer S, Schnetzer M. What did you really earn last year?: Explaining measurement error in survey income data. J R Stat Soc Ser A Stat Soc 2019;182(4):1411-1437. doi:10.1111/rssa.12463
10. Krumpal I. Determinants of social desirability bias in sensitive surveys: A literature review. Qual Quant 2013;47(4):2025-2047. doi:10.1007/s11135-011-9640-9
11. *Occupational Employement and Wage Statistics*. U.S. Bureau of Labor Statistics; 2022. https://www.bls.gov/oes/tables.htm
12. *Dental Hygienist Salary in Minnesota*. Salary.com https://www.salary.com/research/salary/benchmark/dental-hygienist-salary/mn
13. *Dentist Salary in Minnesota*. Salary.com https://www.salary.com/research/salary/benchmark/dentist-salary/mn
14. Langelier M, Surdu S, Moore J. *The Contributions of Dental Therapists and Advanced Dental Therapists in the Dental Centers of Apple Tree Dental in Minnesota*. Cent Health Work Force Stud Published online August 2020:72.
15. An advanced dental therapist in long-term care: Heather Luebben's case study. Apple Tree Dental; 2018:1-11.
16. Diaz J. Grand Marais Family Dentistry: Dental therapist case study. Wilder Res. Published online May 2017:13.
17. Diaz J. Midwest Dental: Dental therapist case study. Wilder Res. Published online May 2017:11.
18. Urahn SK, Schuler A, Gehshan S, Hale LK, Koppelman J. Expanding the dental team: Studies of two private practices. The PEW Charitable Trusts; 2014:26.
19. Urahn SK, Schuler A, Gehshan S, Hale LK, Koppelman J, Cohen RS. Expanding the dental team: Increasing access to care in public health settings. The PEW Charitable Trusts; 2014:34.
20. Demann ETK, Stein PS, Levitt C, Shelton KE. Employee Relations. Dent Clin North Am 2008;52(3):535-547. doi:10.1016/j.cden.2008.02.005
21. Henderson RI. *Compensation Management in a Knowledge-Based World, Seventh Edition*. Prentice Hall; 1997.

"I just always wanted to save the day."

Singer/songwriter Charlie Puth