

## ABSTRACT

**Purpose of study:** To understand patient satisfaction and needs within a non-profit dental organization in Minnesota that had longstanding integration of dental therapists.

**Methods:** Researchers conducted a cross-sectional survey focusing on patients' satisfaction with their clinical provider, with particular emphasis on dental therapists. Surveyed patients included any who received dental services between February and August 2021 at 1 of 7 dental centers operated by Apple Tree Dental, a non-profit dental organization serving low-income and Medicaid eligible patients in Minnesota.

**Results:** Patients (adult: n=567; child: n=331) ranked information and communication from dental hygienists (*mean*=4.47) higher compared to dentists (*mean*=4.30; *P*=.047) and dental therapists (*mean*=4.24; *P*=.005). Dentists (*mean*=4.32) were rated higher than dental hygienists (*mean*=4.24; *P*=.010) and dental therapists (*mean*=4.09; *P*=.004) on understanding and acceptance. Technical competence and satisfaction with treatment did not differ across provider or patient types. Neither procedure type nor patient characteristics affected scores of overall satisfaction.

**Implications:** Instituting a new workforce model is a complex undertaking, requiring successive levels of legislative, regulatory, and clinical action. Minnesota has been a champion of dental therapy, incorporating the model since 2012. This study's findings show that patients' satisfaction with dental therapists was high and largely equal to other providers, suggesting a high quality of care overall.

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## INTRODUCTION

- Dental therapy is a new workforce model that introduces mid-level practitioners (dental therapists) with both preventive and restorative skills
- Dental therapy has been authorized in 13 states; Minnesota (MN) was the first to establish licensing of dental therapists in 2009
- Dental therapy has been successfully integrated into a variety of practice settings in MN, with improvements in cost of care per unit, production, and collections
- Apple Tree Dental is a large, non-profit dental organization in MN that has employed dental therapists since their earliest availability in 2012

## METHODS

### Cross-sectional survey

- Anonymous, voluntary feedback to assess patient satisfaction with providers at Apple Tree Dental, with emphasis on dental therapists
- Developed using several standardized instruments
- 13-item final survey with satisfaction rating domains including (1) information and communication, (2) understanding and acceptance, and (3) technical competence and satisfaction with treatment items
  - Likert-scale ratings from 1 (strongly disagree) to 5 (strongly agree)

### Data analysis

- Analysis of variance (ANOVA) models of patient satisfaction using provider, patient type, and patient characteristics including sex, race/ethnicity, residence, procedure type

## RESULTS

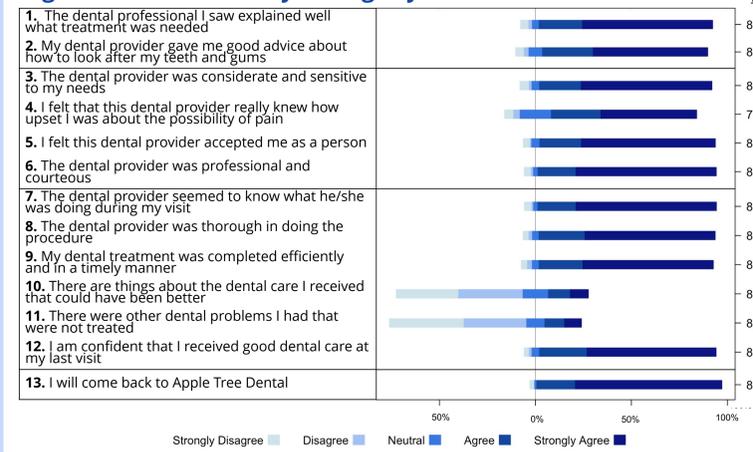
**Table 1. Patient Demographic and Clinical Characteristics**

| Demographic and Clinical Characteristics | Adult patients (n=567)<br>n (%) | Parents/caretakers of patients (n=331)<br>n (%) | Children/other accompanied patients (n=331)<br>n (%) | Difference between groups (χ²)<br>P |
|--|---------------------------------|---|--|-------------------------------------|
| <b>Age (years)</b>                       |                                 |   |  | <.001                               |
| 17 or younger                            | 3 (0.6)                         | 2 (0.6)   | 262 (81.1)   |                                     |
| 18-34                                    | 101 (45.5)                      | 94 (13.2)                                       | 43 (13.3)  |                                     |
| 35-54                                    | 222 (41.0)                      | 184 (55.3)                                      | 13 (4.0)   |                                     |
| 55 and older                             | 216 (39.9)                      | 53 (15.9)                                       | 5 (1.5)  |                                     |
| <b>Sex</b>                               |                                 |   |  | <.001                               |
| Female                                   | 411 (73.3)                      | 303 (92.7)                                      | 164 (50.3)   |                                     |
| Male                                     | 149 (26.6)                      | 24 (7.3)  | 162 (49.7)   |                                     |
| <b>Race/ethnicity</b>                    |                                 |   |  | <.001                               |
| White, non-Hispanic                      | 476 (85.0)                      | 266 (81.3)                                      | 239 (73.3)   |                                     |
| Other                                    | 84 (15.0)                       | 61 (18.7)                                       | 60 (26.7)  |                                     |
| <b>Self-reported area of residence</b>   |                                 |   |  | .06                                 |
| Urban                                    | 351 (62.8)                      |   | 180 (55.2)   |                                     |
| Rural                                    | 208 (37.2)                      |   | 146 (44.8)   |                                     |
| <b>Procedure type</b>                    |                                 |   |  | <.001                               |
| Preventive                               | 251 (32.5)                      |   | 184 (38.1)   |                                     |
| Restorative                              | 521 (67.5)                      |   | 299 (61.8)   |                                     |
| <b>Provider type seen</b>                |                                 |   |  | <.001                               |
| Dentist                                  | 247 (43.6)                      |   | 109 (32.8)   |                                     |
| Dental hygienist                         | 229 (40.4)                      |   | 116 (35.2)   |                                     |
| Dental therapist                         | 91 (16.0)                       |   | 106 (31.9)   |                                     |

## RESULTS (cont.)

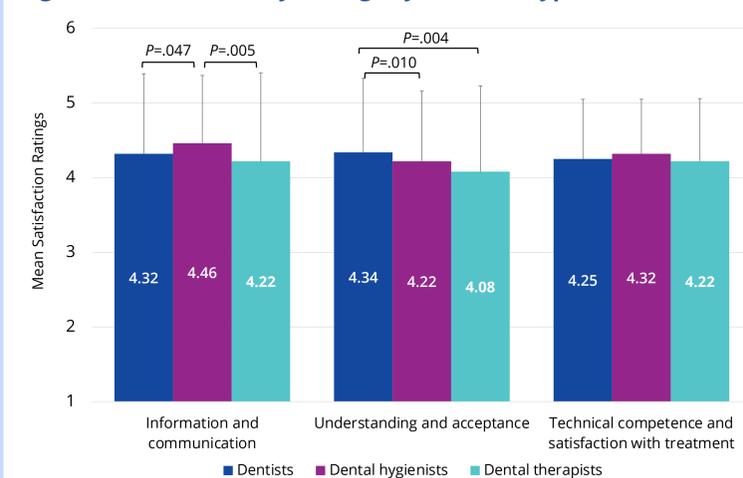
- Patient satisfaction was high across items and within domains (shown in order below)
  - Information and communication, understanding and acceptance, technical competence and satisfaction with treatment, and general satisfaction

**Figure 1. Patient Survey Ratings by Item**



- Significant differences in satisfaction domains based on provider type
  - Information-communication (*P*=.011) (Figure 2)
  - Understanding-acceptance (*P*=.017) (Figure 2)

**Figure 2. Patient Survey Ratings by Provider Type**



## RESULTS (cont.)

- Composite scores of overall satisfaction were high across all groups
- No effects of patient type or provider type, and no interactions

**Table 2. Patients' Overall Satisfaction Ratings**

| Demographic Characteristics            | Overall Satisfaction With Care |                   |                   |
|--|--------------------------------|-------------------|-------------------|
|  | Dentists                       | Dental Hygienists | Dental Therapists |
|  | <i>Mean (SD)</i>               |                   |                   |
| <b>Sex</b>                             |                                |                   |                   |
| Male                                   | 4.46                           | 4.29              | 4.47              |
| Female                                 | 4.27                           | 4.25              | 4.56              |
| <b>Race/ethnicity</b>                  |                                |                   |                   |
| White, non-Hispanic                    | 4.47                           | 4.41              | 4.43              |
| Other                                  | 4.26                           | 4.60              | 4.16              |
| <b>Self-reported area of residence</b> |                                |                   |                   |
| Urban                                  | 4.34                           | 4.25              | 4.55              |
| Rural                                  | 4.40                           | 4.29              | 4.49              |
| <b>Procedure type</b>                  |                                |                   |                   |
| Preventive                             | 4.29                           | 4.31              | 4.54              |
| Restorative                            | 4.55                           |                   | 4.50              |

## CONCLUSIONS AND IMPLICATIONS

- Patient satisfaction with the services of dental therapists was generally high and did not differ in consistent ways from other clinicians
  - Patient satisfaction was high across domains and was not dependent on patient type
  - Overall scores, when not segregated by domain, showed no effects based on provider or patient characteristics and no interactions
- Early adoption of dental therapists in MN and at Apple Tree Dental illustrates that a workforce with hybrid skills (preventive and restorative) can be successfully integrated into established oral health teams
- Integration of dental therapists permits organizations to be flexible in accommodating patient need
  - Increase in organizational capacity corresponds with an increase in access to care in numerous locations throughout MN
- Patient satisfaction, as a component of quality measurement, indicates the dental therapy workforce has not diminished quality of patient care

## REFERENCES/ACKNOWLEDGMENTS

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