

# Impact of Dental Therapists on Organizational Productivity and Clinician and Patient Satisfaction

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# Apple Tree Dental

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- Non-profit community dental organization founded in Minnesota, 1985
  - 8 locations throughout Minnesota
  - Mobile programs in 145 locations
  - Serves primarily low-income, Medicaid eligible patients
  - Among first employers of dental therapists in MN since 2012





# Objective of the Study

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- Assess clinician and patient attitudes towards dental therapy at a major dental organization with longstanding integration of dental therapists
  - Dental workforce level
    - Attitudes across rating domains
    - Attitudes across provider/practice characteristics
  - Patient level:
    - Patient satisfaction across rating domains
      - Information and communication, understanding and acceptance, technical competence, general satisfaction
    - Satisfaction across provider and patient characteristics

# Methods

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- Cross-sectional survey sent to dental workforce and patients
  - Dentists
  - Dental hygienists and dental assistants
  - Dental therapy workforce
  - Administrators
  - Patients with appointments within last week of survey deployment

# Dental Workforce and Patient Surveys

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## Dental Workforce

- Items from several studies distributed across 4 surveys
- Shared items with at least 1 unique item per survey
- Deployed via SurveyMonkey

## Patients

- Items from:
  - Dental Satisfaction Survey (Australian Institute of Health and Welfare)
  - 10-Item Dental Visit Satisfaction Scale
  - Safety Net Dental Clinic Manual (suggested surveys)
- Deployed via SurveyMonkey

# Results – Dental Workforce

Demographic Characteristics	All Respondents	Dentists	Dental Hygienists and Dental Assistants	Dental Therapy Workforce	Administrators	Difference between workforce ( $\chi^2$ )
	(n=180)	(n=30)	(n=89)	(n=11)	(n=50)	
	n (%)	n (%)	n (%)	n (%)	n (%)	P
<b>Gender<sup>a</sup></b>						<b>&lt;.001</b>
Female	137 (87.2)	17 (60.7)	67 (91.8)	10 (90.9)	43 (95.6)	
Male	20 (12.7)	11 (39.3)	6 (8.2)	1 (9.1)	2 (4.4)	
<b>Age group</b>						<b>.010</b>
18-24	19 (10.6)	-	18 (20.2)	-	1 (2.0)	
25-34	67 (37.2)	15 (50.0)	33 (37.1)	7 (63.6)	12 (24.0)	
35-44	48 (26.7)	7 (23.3)	20 (22.5)	2 (18.2)	19 (38.0)	
45-54	17 (9.4)	2 (6.7)	8 (9.0)	1 (9.1)	6 (12.0)	
55-64	22 (12.2)	4 (13.3)	7 (7.9)	1 (9.1)	10 (20.0)	
65 and over	7 (3.9)	2 (6.7)	3 (3.4)	-	2 (4.0)	
<b>Race</b>						<b>.001</b>
White	143 (79.4)	15 (50.0)	72 (80.9)	10 (90.9)	46 (92.0)	
Asian	18 (10.0)	11 (36.7)	6 (6.7)	1 (9.1)	-	
Hispanic or Latino	7 (3.9)	1 (3.3)	2 (2.2)	-	4 (8.0)	
Black or African American	6 (3.4)	1 (3.3)	5 (5.6)	-	-	
Two or more races	5 (2.8)	2 (6.7)	3 (3.4)	-	-	
Native Hawaiian/Pacific Islander	1 (0.6)	-	1 (1.1)	-	-	

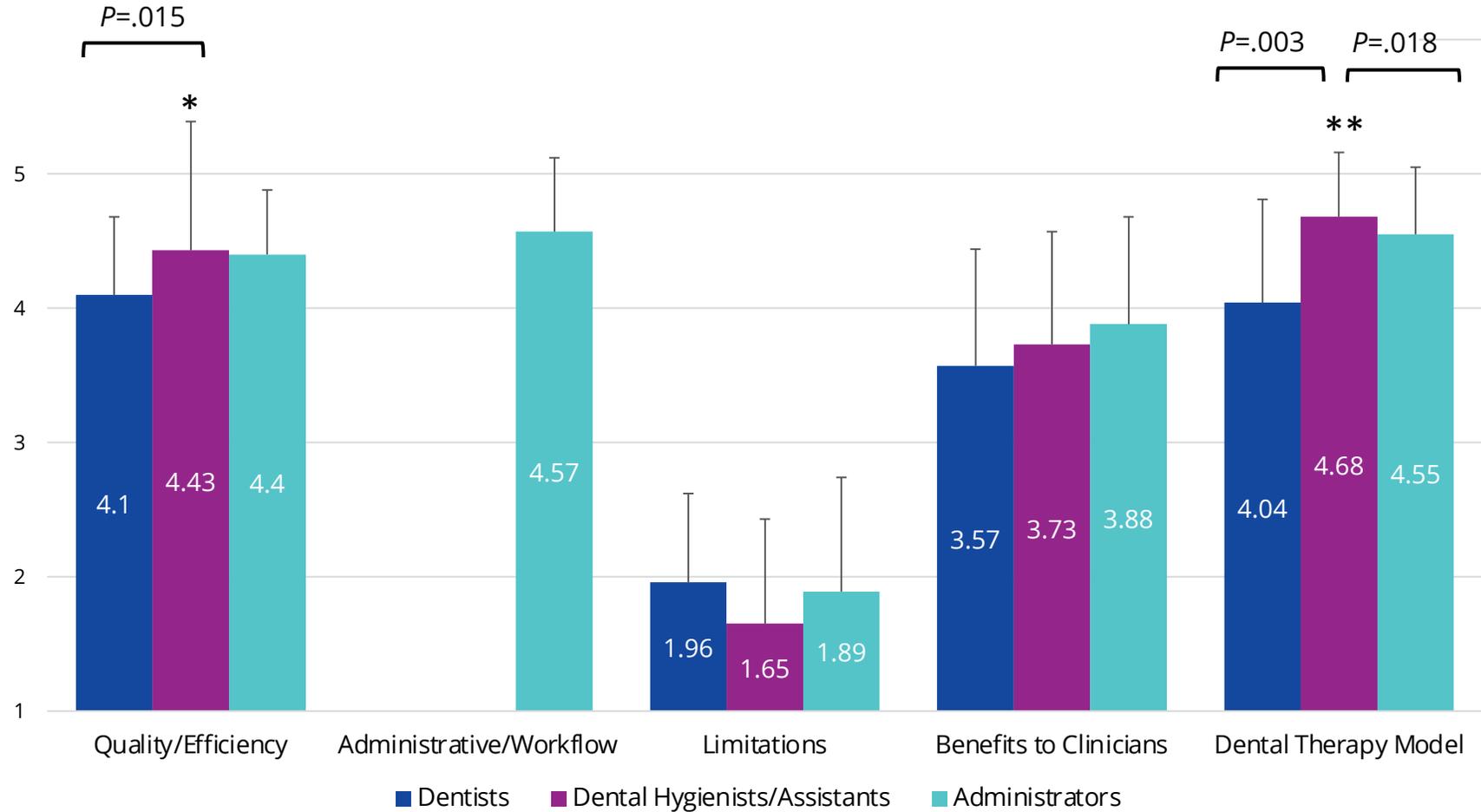
# Results – Dental Workforce

## Provider Attitudes Towards Dental Therapy



# Results – Attitudes About Dental Therapy

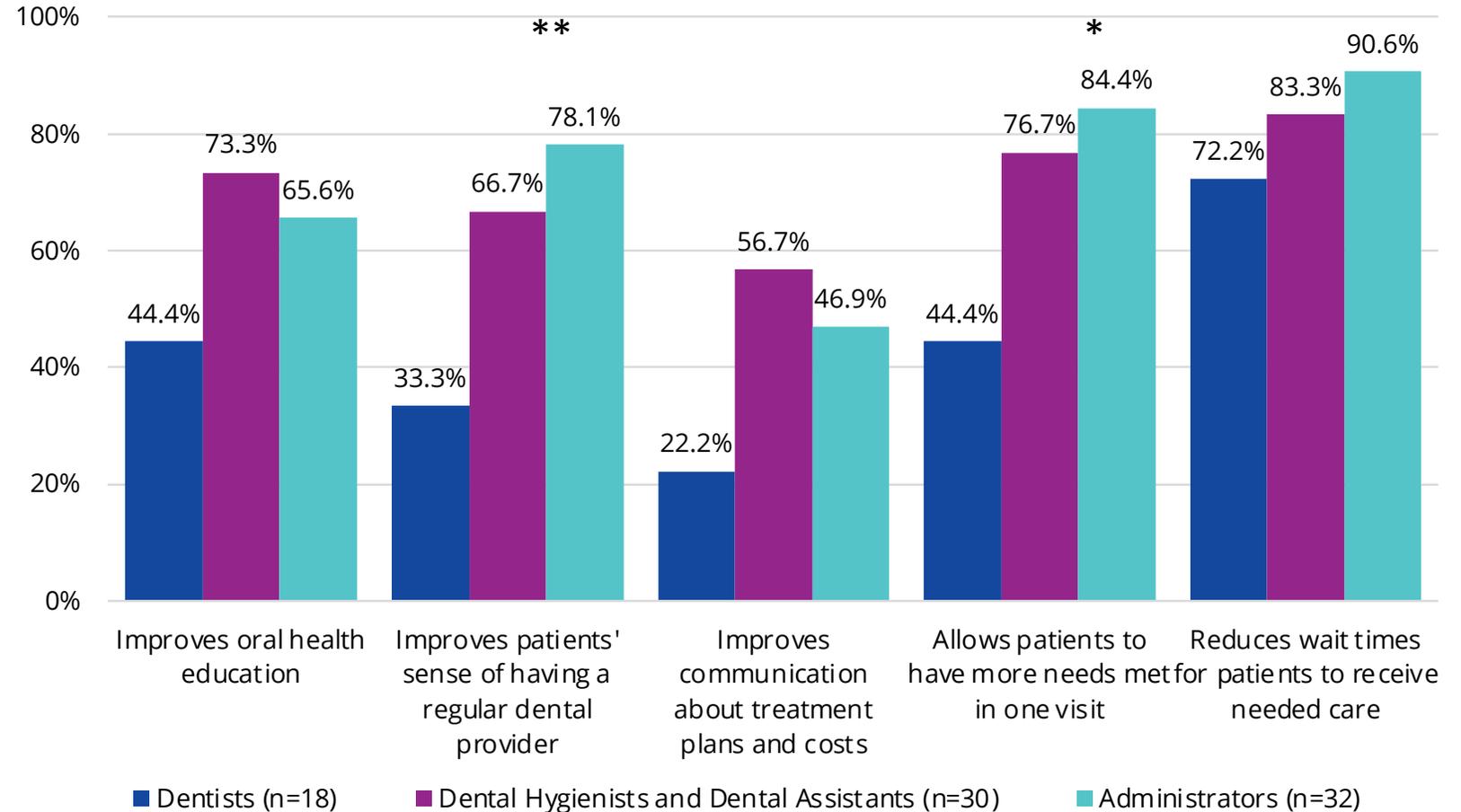
- High ratings overall
- Dental hygienists rated quality and efficiency significantly higher than dentists
- Dental hygienists and administrators also rated the benefits of the dental therapy model higher than dentists



\* $P=.016$   
 \*\* $P=.004$

# Results – Improvements to Care

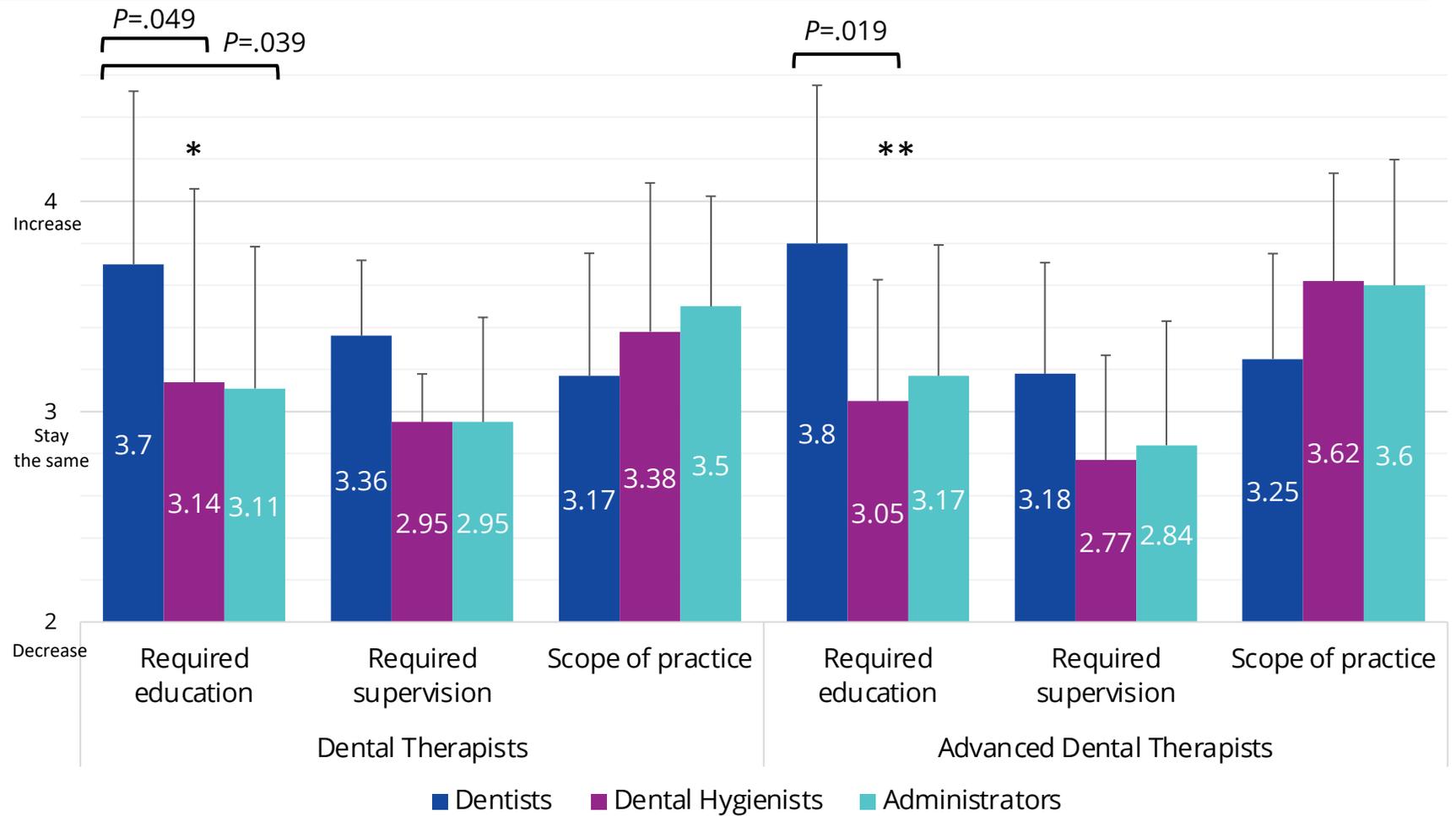
- High agreement on patient benefits, especially reduced wait times
- Some differences shown between agreement among dentists and administrators



\* $P=.008$ ; Dentists vs. admin  $<.05$   
 \*\* $P=.006$ ; Dentists vs. admin  $<.05$

# Results – Required Education, Supervision, Scope of Practice

- Rated on scale from 1 (decrease greatly) to 5 (increase greatly)
- Clinicians agreed on most recommendations
- Increases in required education for DTs and ADTs were common responses among dentists



\*P=.008  
\*\*P=.006

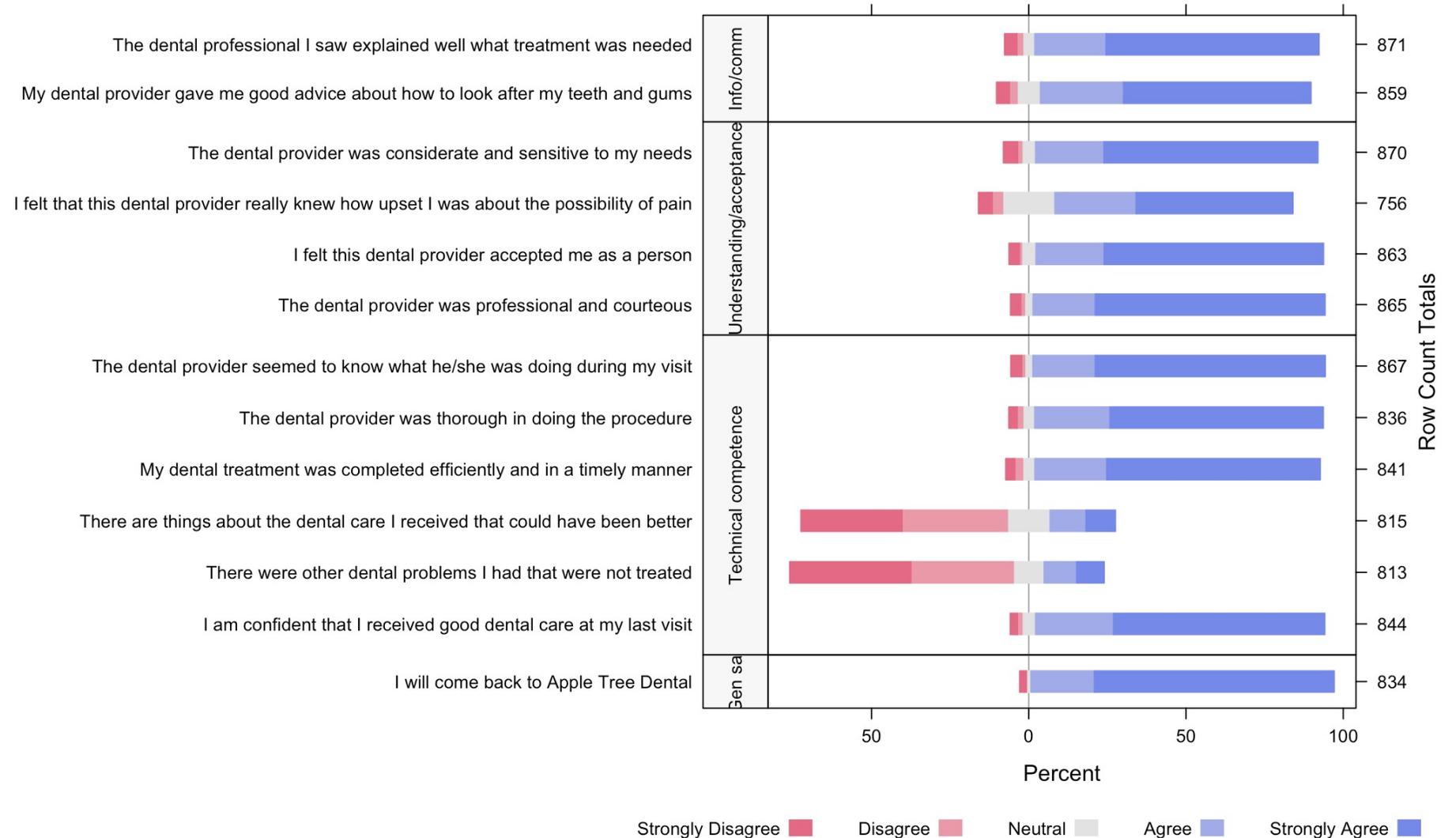
# Results - Patients

Demographic and Clinical Characteristics	Adult patients	Parents/ caretakers of children	Children/other accompanied patients	Difference between groups (x <sup>2</sup> )
	(n=567)	(n=331)	(n=331)	
	n (%)	n (%)	n (%)	P
<b>Age (years)</b>				<b>&lt;.001</b>
17 or younger	3 (0.6)	2 (0.6)	262 (81.1)	
18-24	26 (4.8)	6 (1.9)	27 (8.4)	
25-34	75 (13.8)	88 (27.2)	16 (5.0)	
35-44	120 (22.1)	110 (34.0)	9 (2.8)	
45-54	102 (18.8)	65 (20.1)	4 (1.2)	
55-64	112 (20.7)	35 (10.8)	-	
65 and older	104 (19.2)	18 (5.6)	5 (1.5)	
<b>Sex</b>				<b>&lt;.001</b>
Female	411 (73.3)	303 (92.7)	164 (50.3)	
Male	149 (26.6)	24 (7.3)	162 (49.7)	
Other	1 (0.2)	-	-	
<b>Race/ethnicity</b>				<b>&lt;.001</b>
White, non-Hispanic	476 (85.0)	266 (81.3)	239 (73.3)	
Hispanic (alone or in combination)	17 (3.0)	21 (6.4)	16 (5.2)	
Black or African American, non-Hispanic	21 (3.8)	8 (2.4)	12 (3.7)	
American Indian/Alaska Native	3 (0.5)	3 (0.9)	4 (1.2)	
Asian	17 (3.0)	10 (3.1)	10 (3.1)	
Native Hawaiian/Pacific Islander	-	2 (0.6)	-	
Multiracial/Other <sup>b</sup>	26 (4.6)	17 (5.2)	44 (13.5)	

Demographic and Clinical Characteristics	Adult patients	Parents/ caretakers of children	Children/other accompanied patients	Difference between groups (x <sup>2</sup> )
	(n=567)	(n=331)	(n=331)	
	n (%)	n (%)	n (%)	P
<b>Self-reported area of residence</b>				<b>.06</b>
Urban	116 (20.8)		53 (16.3)	
Suburban	235 (42.0)		127 (39.0)	
Rural	208 (37.2)		146 (44.8)	
<b>Appointment type</b>				<b>&lt;.001</b>
First visit	36 (6.5)		26 (8.0)	
Regular checkup/cleaning	225 (40.4)		158 (48.6)	
Filling	118 (21.2)		83 (25.5)	
Dental emergency	68 (12.2)		26 (8.0)	
Crown/bridge/denture	64 (11.5)		9 (2.8)	
Extraction	6 (1.1)		1 (0.3)	
Root canal	40 (7.2)		22 (6.8)	
<b>Provider type seen<sup>c</sup></b>				<b>&lt;.001</b>
Dentist	247 (43.6)		109 (32.8)	
Dental hygienist	229 (40.4)		116 (35.2)	
Dental therapist	91 (16.0)		106 (31.9)	

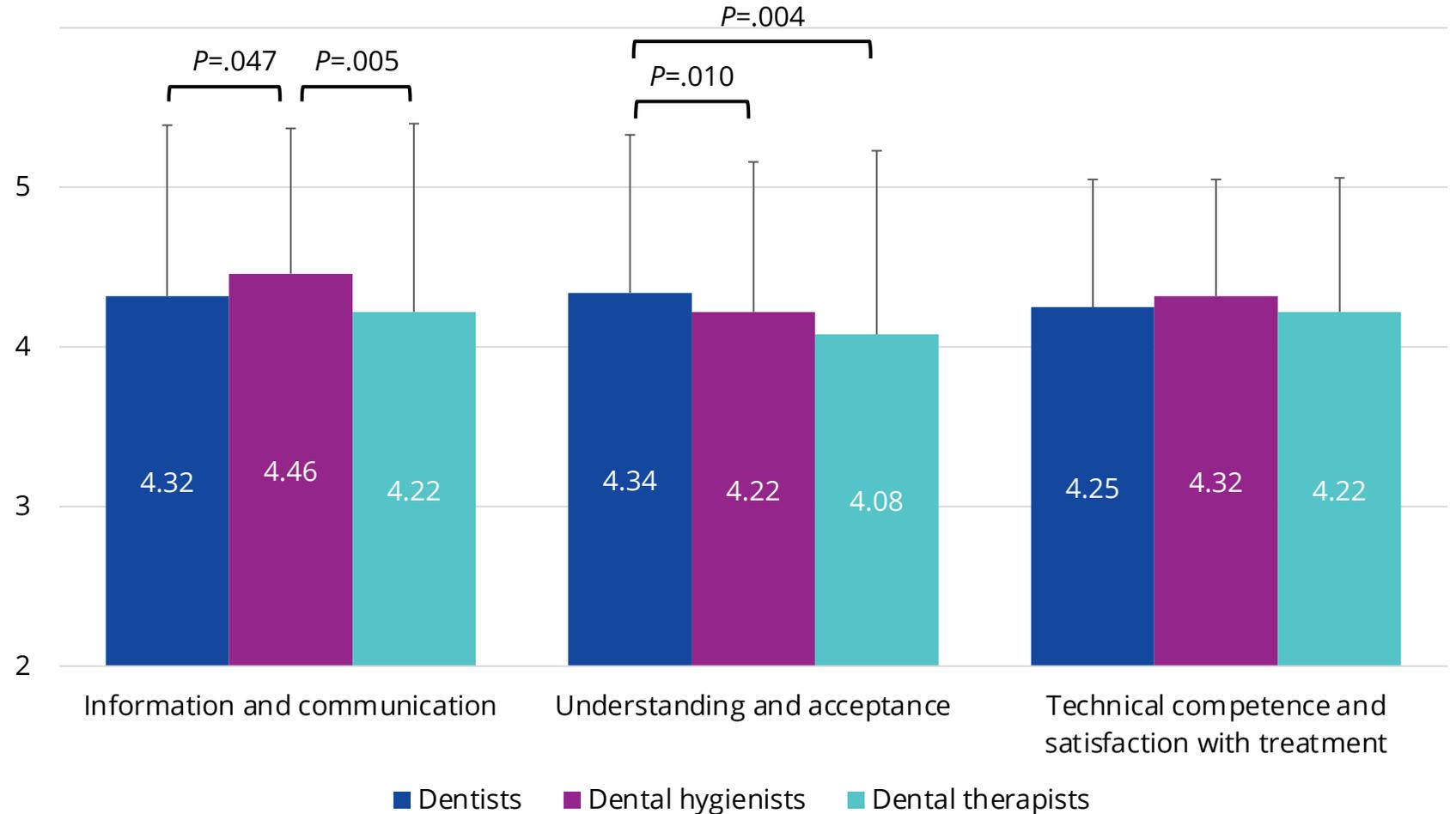
# Results - Patients

## Patient Satisfaction



# Results – Patient Satisfaction

- Main effect of provider
  - Information-communication ( $P=.011$ )
  - Understanding-acceptance ( $P=.017$ )
- No effects of patient type



# Results – Patient Satisfaction Across Groups

- High ratings overall
- No differences based on sex, race/ethnicity, residence, procedure type, or clinician seen
- No interactions

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
Non-White	4.26	4.60	4.16
<b>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

# Implications and Conclusions

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- Dental therapy represents an innovative and effective approach to increasing access to service
- Early adoption of this new workforce in Minnesota and at Apple Tree Dental provides concrete evidence that a workforce with hybrid skills (preventive and restorative) can be successfully integrated into established oral health teams
  - High clinician agreement about benefits to patients and dental team
  - Consistently high patient satisfaction

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# Questions?

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