



Adolescent Oral Health Related Quality of Life: A Mixed-Method Study



Children's Hospital Colorado

Kate Trieschman, DMD, MPH¹, Caitlin Olson, MS³, Katherine Chin, DDS, MS^{1,2}, Tamanna Tiwari, BDS, MDS, MPH^{2,3}
Children's Hospital Colorado, Pediatric Dentistry¹, University of Colorado School of Dental Medicine², University of Colorado Anschutz Medical Campus³

BACKGROUND

- Oral health is an important quality of life measure to consider for pediatric patients. Dental literature is growing regarding the oral health status of adolescent patients; however, it lacks research to understand provider perspectives surrounding the treatment of adolescents.
- This study cross-sectional, mixed-methods study aims to assess oral health related quality of life using the Child Oral Health Impact Profile (COHIP) for patients aged 12-15 based on their caries experience coupled with novel insights regarding the dentist's perspective, joys, and challenges of caring for this unique, age-defined population.

METHODS

Quantitative Methods:

- 100 adolescent patients at the Children's Hospital Colorado Dental Center were surveyed to measure their COHIP. Their DMFS scores, in addition to demographic information, including age, race, ethnicity, and sex were recorded.
- The sample followed a non-normal distribution, and thus, a Zero Inflated Negative Binomial (ZINB) regression model was used. Univariate associations between independent (age, sex, race, ethnicity, and COHIP subscales) and outcome variables (DMFS) were tested to indicate which variables should be included in the multivariable models ($p < 0.05$, cutoff). The final model uses odds ratios, 95% CIs, and P-values.

Qualitative Methods

- 6 dentists who routinely see adolescent patients were recruited through the snowball method to participate in semi-structured interviews. Interviews were transcribed and qualitative coding was completed by the primary investigator and validated by the mentor.
- Themes and subthemes were then identified and correlated with theme mapping on Coggle.

RESULTS

Table 1. Summary Statistics for Study Sample

Variable	Overall (N=100)
Age	
Median (Q1, Q3)	14.0 (13.0, 14.0)
Range	12.0, 15.0
DMFS	
Median (Q1, Q3)	2.0 (0.0, 7.0)
Range	0.0 – 29.0
Sex	
Missing	1
Female	47 (47.5%)
Male	48 (48.5%)
Other	2 (2.0%)
Prefer not to say	2 (2.0%)
Race	
Missing	6
American Indian or Alaska Native	4 (4.3%)
Asian	4 (4.3%)
Black or African American	22 (23.4%)
White	37 (39.4%)
More Than One Race	19 (20.2%)
Unknown or Not Reported	8 (8.5%)
Ethnicity	
Missing	3
Hispanic or Latino	58 (59.8%)
Not Hispanic or Latino	33 (34.0%)
Unknown/Not reported	6 (6.2%)

In the Univariate analysis, having a higher COHIP score increased the odds of being caries-free (OR=1.05, CI - 1.01,1.09). Being male (OR=4.12, CI - 1.4-12.15), African American (OR=10.74, CI - 2.41, 47.81), and non-Hispanic (OR=3.34, CI 1.14, 9.82) increased the odds of being caries-free. Using step-wise selection, race was removed due to insignificance ($p > 0.05$), while all other factors were significant (Table 2).

In the Univariate analysis, having a higher Oral Health Well Being Score (OR=1.08, CI - 0.99, 1.17) and a higher Self Image Score (OR=1.12, CI - 1, 1.24 OR=4.12, CI - 1.4-12.15). In the multivariate model, Oral Health Well Being lost significance, while all other factors were significant (Table 3).

Themes identified through coding of the qualitative interviews were Challenges Faced, Establishing Trust & Rapport, Practice Experience, Treatment Planning, and Transition of care. Within each theme, exist subthemes which are interconnected, based on content of the interviews (Figure 1)

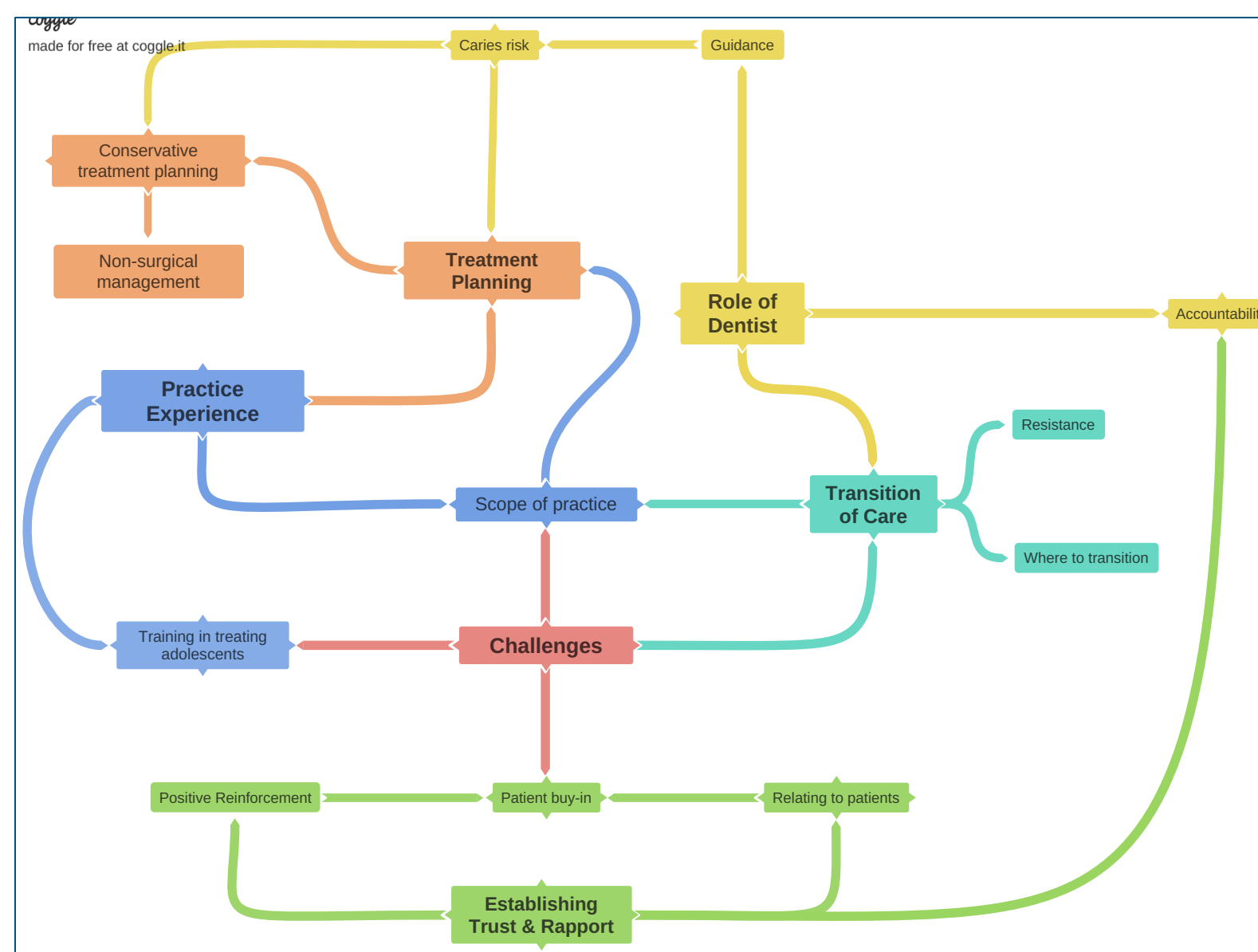


Table 2. Association between COHIP score and Dental Caries

	Odds Ratio	95% CI	Zero P-Value
Male (Ref: Female)	4.61	(1.37, 15.54)	0.01
Total COHIP Score	1.06	(1.02, 1.1)	0.01
Ethnicity Not Hispanic or Latino. (Ref: Hispanic or Latino)	4.77	(1.34, 16.97)	0.02
Missing	12.01	(0.88,164.67)	0.06

Table 3. Association between COHIP subscales and Dental Caries

	Odds Ratio	95% CI	Zero P-Value
Male (Ref: Female)	4.61	(1.37, 15.54)	0.01
Oral Health Well Being Score	1.11	(0.99, 1.23)	0.07
Self Image Score	1.13	(1.01, 1.26)	0.04
Ethnicity Not Hispanic or Latino. (Ref: Hispanic or Latino)	5.14	(1.34, 18.63)	0.01
Missing	8.77	(0.66,115.92)	0.10

"It's really important to develop a rapport where they want to take care of themselves, because those consequences really do have a lifetime legacy."

"I can tell you most of the patients that I had were in no hurry to leave, and we were really a dental home."

"I think it would be interesting to have more education for somebody about adolescents"

"I'd say I'm almost a little more conservative with teenagers than than my adult population."

CONCLUSIONS

- Higher Quality of life measured by COHIP was associated with being caries-free in the adolescent population – having clinical relevance.
- As there is clinical relevance to oral health related quality of life for adolescents, it's important to assess clinicians' experiences treating this population, including challenges, level of training and how it relates to scope of practice.
- Despite the challenges, both pediatric dentists and general dentists enjoy treating adolescents and follow similar outcomes in treatment, though the rationale for the philosophy varies.

IMPLICATIONS

- Public health policy should address caries experience in adolescents, as adolescents with caries history experience lower oral health related quality of life.
- Adolescence is a time of both physical and mental development and maturity, and this patient population should be given special consideration in treatment planning. Further research is needed to determine the how dental needs of adolescents may vary from pediatric and adult populations.
- Dental schools and residency programs should increase educational efforts in all specialties of dentistry to better equip providers to treat adolescent patients.