The Role of Interpersonal Racism Experiences on Adolescent Oral Health

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Background

- Although access to oral healthcare services has increased for adolescents across the United States, inequities in oral health outcomes persist
- Oral health inequities are rooted in structures of racism, which manifest as disparities in socioeconomic status, educational attainment, and physical and mental health[1]
- Previous studies found that patient-reported experiences with discrimination were associated with lower access to and lower quality of oral health services[1,2,3]
- Previous studies also found that high levels of self-reported racism were associated with non-optimal oral health behaviors, including less frequent toothbrushing, higher sugar consumption, and increased tooth loss[2,4,5]
- There is a current gap in knowledge regarding the relationship between adolescent experiences with racism and oral health-related behaviors and outcomes

Objective and Hypothesis

Objective: To evaluate the association between adolescent patients' experiences with interpersonal racism (IPR) and their oral health related quality of life (OHRQoL) and behaviors

Null Hypothesis: Adolescent patients who reported experiences with interpersonal racism (IPR) will not have decreased OHRQoL nor increased oral health risk-related behaviors

Study Type: Cross-Sectional Study

IRB Approval: University of Illinois Chicago (STUDY2023-0661**)**

We acknowledge the editorial assistance of the UIC Center for Clinical and Translational Science (CCTS), which is supported by the National Center for Advancing Translational Sciences (NCATS), National Institutes of Health, through Grant Award Number UL1TR002003.

Methods

Study Recruitment: Adolescent patients (ages 11 to 17 years) presenting to the UIC College of Dentistry or Apple Dental Care were recruited. Prior to clinic sessions, a list of potential subjects was drafted from the daily clinic schedule based on age only. All eligible patients and their parents/legal guardians were approached and asked if they would like to participate in the study following a recruitment script.

Inclusion Criteria	Exclusion criteria
• Adolescent patients (ages 11 to 17 years) who are attending appointments at UIC dental clinics or Apple Dental Care • Must have a legal guardian present and readily available to provide verbal consent • Speak and read English or Spanish • No communication difficulties or SHCN	• Adolescents who have communication difficulties or SHCN • Adolescent patients who do not have a legal guardian present during their appointment • Adolescents who do not speak or read English or Spanish

Study Processes: Enrolled adolescents completed four questionnaires via Qualtrics.

Questionnaires:

1. ***Demographic questionnaire:*** questionnaire consisting of eight basic demographic questions
2. ***Adolescent Discrimination Distress Index (ADDI):*** validated 15-item instrument designed to assess adolescent distress in response to perceived instances of racially motivated discrimination on 3 subscales (educational, institutional, and peer); *if participants selected "yes" to experience, they then rated on 5-point scale how much the experience bothered them (1=not at all, 5=extremely)*
3. ***Child Oral Health Impact Profile Short Form (COHIP-SF19):*** validated 19-item instrument designed to measure self-reported oral health related quality of life (OHRQoL); *a lower score on the COHIP indicates lower OHRQoL*
4. ***Oral Health Behaviors Questionnaire:*** adapted subscale consisting of questions about oral health attitudes and behaviors and self-rated dental health

Statistical Analysis: completed using R software version 4.3.1 with a significance level set at 0.05; descriptive statistics and bivariate analyses (Wilcoxon rank sum test, Fisher's exact test) were completed

Results

Table 1: Selected demographic characteristics of study participants (n=80)

Individual level variables	N (%) or Mean (SD)
Age*	13.2 (1.6)
Gender identity	
Female	44 (55.0)
Male	36 (45.0)
Grade at school	
4th to 6th grade	16 (20.0)
7th to 9th grade	48 (60.0)
10th to 12th grade	16 (20.0)
Type of school	
Public	64 (75.0)
Private	9 (11.3)
Charter	7 (8.8)
Ethnicity**	
Hispanic or Latino	49 (62.8)
Not Hispanic or Latino	29 (37.2)
Race**	
Asian	6 (8.2)
American Indian/Alaskan Native	3 (4.1)
Black/African American	24 (32.8)
White	17 (23.3)
Other	23 (31.5)

*Age missing for one participant
**Numbers do not sum to 80 due to missing data

Table 2. ADDI subscale scores

Subscale (N)	No experience reported N (mean)	Experience reported N (mean)	Mean response experience reported (SD)
Overall (N=80)	16 (20)	64 (80)	-
Educational discrimination stress subscale (N=80)	31 (38.8)	49 (61.3)	2.28 (0.934)
Institutional discrimination distress subscale (N=79)	40 (50.6)	39 (49.4)	2.18 (1.682)
Peer discrimination distress subscale (N=77)	41 (53.2)	36 (46.8)	2.39 (1.489)

- Experience reported: at least one "yes" on subscale
- ***Most experiences reported***: educational discrimination stress
- ***Most bothered by experience***: peer discrimination distress

Table 3. Descriptive analysis of oral health-related quality of life and experience with interpersonal racism

ADDI subscale	Number of participants not reporting experience with IPR on subscale	Mean COHIP score for no experience with IPR (SD)	Number of participants reporting experience with IPR on subscale	Mean COHIP score for experience with IPR (SD)	Wilcoxon Rank Sum Test (2-sided) p-value
Overall ADDI	16	53.69 (8.26)	63	51.52 (7.94)	0.302
Educational discrimination stress	31	53.29 (8.78)	49	51.20 (7.33)	0.185
Peer discrimination distress	42	53.62 (7.87)	35	50.06 (7.94)	0.056
Institutional discrimination distress	40	54.05 (8.03)	39	50.15 (7.46)	**0.015**

- Mean score on COHIP was lower for participants with at least one "yes" on ADDI (lower OHRQoL) but result was ***not statistically significant***
- There was a ***significant difference*** in mean total COHIP scores between patients who faced discrimination and those who did not on the institutional discrimination distress subscale
- Two questions on the ADDI ***significantly effect*** total COHIP scores:
  1. *People acted as if they thought you were not smart (institutional)*
  2. *Others your age did not include you in their activities (peer)*

Table 4. Correlation between oral health behaviors and experience with interpersonal racism

Oral Health Behaviors	No experience with IPR N (%)	Experience with IPR (%)	P-value
Frequency of dental brushing			**0.023***
< 2 times/day	2 (12.5)	27 (43.5)	
≥ 2 times/day	14 (87.5)	35 (56.5)	
Sugar-intake frequency			0.082
< 1 time/day	7 (43.75)	14 (22.22)	
≥ 1 time/day	9 (56.25)	49 (77.78)	
Utilization of dental services (last year)			1.00*
Yes	15 (93.75)	59 (93.7)	
No	1 (6.25)	4 (6.30)	
Pattern of dental attendance			0.625*
Dental problem	2 (12.50)	5 (7.93)	
Regular check	14 (87.50)	58 (92.07)	
Self-rated dental health			1.00*
Fair or poor	4 (25.00)	16 (25.8)	
Good	12 (75.00)	46 (74.2)	

***Fisher's Exact Test**

- More experiences with IPR were reported in the group who brush less than twice per day, and this result was ***statistically significant***
- A multivariate logistic regression analysis was completed, and ***no statistical significance*** was found between race/ethnicity demographics and oral health behaviors

Conclusions

- Adolescent patients who reported experiences with IPR did not have decreased oral health related quality of life (OHRQoL) or increased oral health risk related behaviors compared to adolescent patients without reported experiences with IPR
- Patients who indicated experiences with IPR on the institutional discrimination distress subscale had significantly lower mean total COHIP scores than those who did not
- Patients responding "yes" to the following questions on the ADDI had significantly lower COHIP scores (OHRQoL): "*People acted as if they thought you were not smart" and "Others your age did not include you in their activities"*
- Patients with experiences with IPR were less likely to brush their teeth two times per day