THE INFLUENCE OF SOCIAL DETERMINANTS ON PEDIATRIC ORAL HEALTH

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Background

- **Dental caries in children** can cause pain, poor sleep, poor nutrition, and poor psychosocial well-being[1]
- **Need for advanced stage dental treatment (ASDT)**, in this study, refers to **need for pulp therapy or extraction** of teeth in children
- **Social determinants of health (SDOH)** are the conditions surrounding an individual's life that can affect their health, functioning, and quality of life[2]
- **Healthy People 2030 SDOH Domains**[2]
  - Education Access/Quality
  - Healthcare Access/Quality
  - Neighborhood/Built Environment
  - Social/Community Context
  - Economic Stability

Social Determinants of Health

Aims

Objective: To evaluate associations between need for ASDT and SDOH/SDOH risk tally scores

- **H_{01}**: There is no association between children's need for ASDT and SDOH variables
- **H_{02}**: There is no association between children's need for ASDT and SDOH risk tally scores

Methods

- **Study Type:** Cross-sectional study (**Survey + Chart Review**)
- **Inclusion Criteria:** Legal guardians of 3–16-year-old patients receiving an initial/recall exam at UIC Post-Grad Pediatric Dental Clinic, who can complete a Qualtrics questionnaire in English or Spanish
- Determined **SDOH Risk Tally Scores** (+/- Covid Question) using Protocol for Assessing Patient's Assets, Risks and Experiences (**PRAPARE**) Methodology[3]

SDOH Questionnaire Response (*context dependent)	Risk Tally Point Valuation
"Never," "*No," "0," "Not Hispanic/Latino," "White/Caucasian," "United States Country of Origin," "Private Insurance"	0
"Rarely," "Often," "All the Time," "*Yes,""1-10," "Hispanic/Latino," "Non-White/Caucasian," "Other Country of Origin," "Public Insurance/Uninsured"	1

Results

Table 1: Study Characteristics

Characteristic	Mean (SD)
Child Age at Time of Survey	6.6 (2.5)
DMFT Score	0.77 (1.3)
dmft score	7.9 (4.8)
DFT score	0.77 (1.3)
dft score	7.1 (4.5)
Number of Teeth Requiring ASDT	2.1 (3.2)
SDOH Risk Tally Score	7 (2.4)
SDOH Risk Tally Score + Covid-19	7.2 (2.5)

Table 2: Logistic Regression Odds Ratios between Selected Variables and Need for ASDT

Variable	Odds Ratio	95% CI Lower Bound	95% CI Upper Bound
Child's Age at Time of Survey	0.68	0.54	0.86
Preferred Language	0.51	0.09	3.1
Child's Sex	1.02	0.39	2.7
Child Hispanic/Latino Status	1.08	0.39	3
Transportation-Other Pressing Needs	2.17	0.75	6.2
Housing Stability-Consistent Place	0	0	0
Housing Stability-Structural Problems	3.39	0.53	21.8
Food Security- Concern over Daily Meals	3.36	0.73	15.51
SDOH Risk Tally Score	0.94	0.71	1.25

Table 3: Independent Samples T-Tests and Correlation Coefficients among SDOH Risk Tally Scores

Variable	N(%)	Mean (SD)	SE Mean	P-Value	95% CI Lower	95% CI Upper	Correl. Coefficient to ASDT	P-Value
SDOH Risk Tally Score				0.7	-1.14	0.77	0.03	0.75
Need for ASDT	52 (52.5%)	7.04 (2.4)	0.33					
No Need for ASDT	47 (47.5%)	6.85 (2.4)	0.35					
SDOH Risk Tally Score + Covid-19				0.61	-1.27	0.75	0.04	0.70
Need for ASDT	52 (52.5%)	7.33 (2.6)	0.36					
No Need for ASDT	47 (47.5%)	7.06 (2.5)	0.36					

Table 4: Pearson Chi Square Tests of Study Variables and Need for ASDT

Variable	N (%) Need for ASDT	N(%) No Need for ASDT	P-Value
Language Preference			0.23
English	49 (54%)	41 (46%)	
Spanish	3 (33%)	6 (67%)	
Child's Sex			0.74
Male	27 (51%)	26 (49%)	
Female	25 (54%)	21 (46%)	
Child Hispanic/Latino Status			0.44
Hispanic/Latino	27 (49%)	28 (51%)	
Not Hispanic/Latino	25 (57%)	19 (43%)	
Child's Race			0.79
White/Caucasian	22 (51%)	21 (49%)	
Other	27 (54%)	23 (46%)	
Access- Child PCP Status			0.94
Has PCP	51 (53%)	46 (47%)	
Does Not Have PCP	1 (50%)	1 (50%)	
Access- Child's Dental Insurance			0.62
Private	2 (67%)	1 (33%)	
Self/Public/Uninsured	50 (52%)	46 (48%)	
Transportation- Lack of Transportation			0.45
Yes	12 (60%)	8 (40%)	
No	40 (51%)	39 (49%)	
Transportation- Other Pressing Needs			0.34
Yes	26 (48%)	28 (52%)	
No	26 (58%)	19 (42%)	
Stress- Average Daily Stress			0.34
Yes	48 (53%)	42 (47%)	
No	2 (33%)	4 (66%)	
Economic Stability- Financial Status			0.14
Unstable	38 (49%)	40 (51%)	
Stable	14 (67%)	7 (33%)	
Economic Stability- Trouble Paying Bills			0.57
Yes	36 (55%)	30 (45%)	
No	16 (48%)	17 (52%)	
Housing Stability- Consistent Place			0.06
Yes	52 (54%)	44 (46%)	
No	0 (0%)	3 (100%)	
Housing Stability- Worry about Losing Home			0.78
Yes	10 (56%)	8 (44%)	
No	42 (52%)	39 (48%)	
Housing Stability- Structural Problems			0.07
Yes	8 (80%)	2 (20%)	
No	44 (49%)	45 (51%)	
Food Security- Concern over Daily Meals			0.06
Yes	13 (72%)	5 (28%)	
No	39 (48%)	42 (52%)	
Food Security- Recent Food Stamps App			0.21
Yes	33 (58%)	24 (42%)	
No	19 (45%)	23 (55%)	
Education- Parental Status			0.45
High School Education +	43 (54%)	36 (46%)	
No HS/GED Completion	9 (45%)	11 (55%)	
Covid-19 Negative Effects			0.38
Yes	15 (60%)	10 (40%)	
No	37 (50%)	37 (50%)	

Conclusion

- Findings are **not consistent** with expectations based on existing literature, however literature tends to focus on caries prevalence and not on caries severity
- Data **did not support** an association between SDOH/SDOH risk tally scores and need for advanced stage dental treatment
- This study provides **insight into UIC's pediatric patient population** and their social determinant of health statuses, highlighting barriers they currently face
- Future studies: **focus on food security or housing instability** (which approached significance in this study), or **modification of SDOH risk tally score methodology** to account for population diversity (ex) increased score range from 0-1 to 0-4)

References

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3. PRAPARE Risk Tally Scoring Methodology [Internet]. National Association of Community Health Centers, Inc.; 2016. Available from: http://www.nachc.org/wp-content/uploads/2019/01/PRAPARE-SDH-Risk-Tally-Score-Methodology.pdf

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