

# Comparing Behavioral and Psychosocial Indices in Pediatric Dental Patients with Behavioral Disorders

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## Background

- This study aimed to determine if PRAP scores correlate with Frankl scores to better predict which patients with behavioral disorders will experience distress with dental visits.
- Identifying the patients most at risk for experiencing elevated distress and noncompliance during their visit will enable proactive and targeted support during dental visits.
- The Frankl behavior rating scale<sup>1</sup> is widely used in pediatric dental research and clinical practice based on standardized criteria. Four behavior categories measure a child's attitude during dental care ranging from definitely positive to definitely negative with an overall score assigned by the dental provider from 1-4.
- The Psychosocial Risk Assessment in Pediatrics (PRAP)<sup>2</sup> is a validated measure developed to evaluate a patient's likelihood of experiencing distress with a health care experience. The PRAP uses 8 variables to score each risk factor from 0-3. The numbers obtained for each category are added to obtain a total score between 0 and 24.

## Methods

- This retrospective study collected data via chart review of 55 patients who received a PRAP and a Frankl Score in the dental setting from Jan 2021-October 2023. Data points collected included: sex, ethnicity, age, preferred language, medical history, social history, medications taken, medical diagnosis, insurance, type of dental visit, PRAP score, Frankl Score.
- Group differences were tested via Kruskal – Wallis's test for continuous variables and Chi Squared test or Fisher's Exact tests for categorical variables. Univariate and multiple linear regression models were used to test independent association between PRAP as the independent variable and Frankl as the dependent variable.

## Results

### Background and Demographics of Analytic Cohort by Frankl Score

	1 (N=10)	2 (N=24)	3 (N=21)	P-value (N=0)	Overall (N=55)
<b>Race</b>					
Black/African American	4 (40.0%)	4 (16.7%)	9 (42.9%)	<b>0.03</b>	17 (30.9%)
Other	5 (50.0%)	5 (20.8%)	5 (23.8%)		15 (27.3%)
White	1 (10.0%)	15 (62.5%)	7 (33.3%)		23 (41.8%)
<b>Autism spectrum disorder</b>					
Yes	6 (60.0%)	12 (50.0%)	4 (19.0%)	<b>0.0385</b>	22 (40.0%)
No	4 (40.0%)	12 (50.0%)	17 (81.0%)		33 (60.0%)
<b>Visit type</b>					
Limited oral evaluation	1 (10.0%)	4 (16.7%)	0 (0%)	<b>0.0461</b>	5 (9.1%)
New patient	1 (10.0%)	4 (16.7%)	1 (4.8%)		6 (10.9%)
Operative	2 (20.0%)	5 (20.8%)	13 (61.9%)		20 (36.4%)
Recall	6 (60.0%)	11 (45.8%)	7 (33.3%)		24 (43.6%)

### Association between Frankl and PRAP scores

	Low risk (N=5)	Moderate risk (N=34)	High risk (N=16)	P-value (N=0)	Overall (N=55)
<b>Frankl score</b>					
1	0 (0%)	3 (8.8%)	7 (43.8%)	<0.001	10 (18.2%)
2	1 (20.0%)	14 (41.2%)	9 (56.3%)		24 (43.6%)
3	4 (80.0%)	17 (50.0%)	0 (0%)		21 (38.2%)

The PRAP score is significantly associated with the Frankl score. Specifically, for every 1-point increase in the PRAP score, the odds of a higher Frankl score significantly decrease by a factor of 0.53. (Adjusted for age group and visit type).

Additionally, while adjusting for visit type and PRAP score, age group is significantly associated with the Frankl score. Patients aged 7-11 years are at significantly higher odds of having a higher Frankl score by a factor of 11.05 compared to patients aged 3-6 years.

## References

- Fogels D.M.D., M.S., Frankl D.M.D., M.S.D, Shierf D.M.D., (1962). Should the Parent Remain With The Child In the Dental Operatory? Second Quarter.
- Staab JH, Klayman GJ, Lin L. Assessing pediatric patient's risk of distress during health-care encounters: The psychometric properties of the Psychosocial Risk Assessment in Pediatrics. J Child Health Care. 2014 Dec;18(4):378-87. doi: 10.1177/1367493513496671. Epub 2013 Aug 12. PMID: 23939720.

## Discussion

- Anxiety and distress are shown to be two factors impeding access to healthcare as caregivers are less inclined to attend visits that will be a challenge for their child.
- The PRAP was developed by Certified Child Life Specialists (CCLS) and while not administered by dental providers, the PRAP provides expanded information regarding stress and anxiety management to aid in preparation for dental visits.
- This research study demonstrates the inverse relationship between the PRAP and Frankl score. PRAP assessment can be conducted prior to a patient's dental visit to predict which patients would benefit from behavior management preparation for dental visits.

## Conclusions

- The Frankl score was found to provide information regarding patient behavior that correlates with the PRAP risk classification in dental settings.
- Higher Frankl scores are inversely associated with lower PRAP scores.

### Frankl

Assessment after care  
Informs behavior management plan  
Dentist reported  
Score 1-4; higher less anxiety

### PRAP

Assessment before care  
CCLS reported  
Score 0-24; higher more anxiety