



Adult ADHD and Dental Avoidance

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Introduction

The amount of research which focuses on the connection of ADHD in adults and oral health is quite limited. However, studies have found an association between ADHD and a decreased oral health-related quality of life in adults.¹ In one cohort less than 30% of those with ADHD regularly visited a dentist, which was nearly half the rate of those without ADHD.¹ ADHD in adults has also been linked to higher rates of dental anxiety.²

We are unable to say however if the low rates of dental attendance are due solely to dental anxiety. As such, a study to determine to what degree anxiety and other possible barriers to care play a role in dental attendance in adults with ADHD is appropriate. Determining which barriers have the greatest effect can inform future intervention strategies.

Purpose

Compare the rates of dental anxiety and the primary limiting factors in dental avoidant subjects who both do and do not have ADHD.

Hypotheses: ADHD subjects will have a higher rate of dental anxiety, and that the primary limiting factor(s) would differ between the ADHD and non- ADHD subjects.

Specific Aims: Compare Norman Corah's Dental Anxiety Scale Score as well as the proportions or the primary limiting factor between the two groups.

Methods

A cross-sectional study was devised to investigate the study questions. The study sample was drawn from patients who visited any of the UCHealth Oral & Maxillofacial surgery clinics from 2/27/2025 until 4/18/2025. While patients were providers in their exam room they were screened for inclusion criteria, consented if willing, and then administered the Norman Corah's Dental and Primary Limiting Factor questionnaires.

Predictor Variable: Diagnosis of ADD/ADHD

Inclusion Criteria Study Group: Patients ≥ 18 years of age, screen positive for dental avoidance, have a diagnosis of ADD or ADHD listed in their chart.

Inclusion Criteria Control Group: Patients ≥ 18 years of age, screen positive for dental avoidance, do not have a diagnosis of ADD or ADHD listed in their chart.

Outcome Variables: Dental Anxiety Scale-Revised (DAS-R) Score: 4-20, Primary Limiting Factor: Fear, Systemic, Other

Covariates: Sex, Age, Race, Education Level, Insurance Type, Regular Dentist, Last Dental Appointment, Type of Last Dental Appointment.

Data Analyses: Fisher's exact test for distribution of variables and DAS-R scores, and Linear regression modeling for DAS-R scores.

Some people avoid visiting their dentist even when they suspect they should go. Would you say this is true for you, or not true for you?

Table 1: Group comparisons between participants with and without ADHD across factor and numeric variables

Variable	Category	Study n = 11 (%)	Control n = 8 (%)	Fisher's p-value
Sex	Female	9 (82)	5 (62)	0.603
	Male	2 (18)	3 (38)	
Race	Non-White	2 (18)	3 (38)	0.603
	White	9 (82)	5 (62)	
Education Level	College	7 (64)	1 (12)	0.059
	High school	4 (36)	7 (88)	
Insurance Type	Commercial	2 (18)	0 (0)	0.485
	Public	9 (82)	8 (100)	
Regular Dentist	Yes	4 (36)	2 (25)	1
	No	7 (64)	6 (75)	
Last Dental Appointment	< 6 months	4 (36)	4 (50)	0.669
	< 2 years	5 (45)	2 (25)	
	< 5 years	0 (0)	1 (12)	
	> 5 years	2 (18)	1 (12)	
Reason for Last Appt.	Emergency	4 (36)	1 (12)	0.222
	Routine visit	5 (45)	2 (25)	
	Treatment	2 (18)	5 (62)	
Anxiety Rating	<Moderate	0 (0)	1 (12)	0.687
	Moderate	3 (27)	3 (38)	
	High	3 (27)	1 (12)	
	Severe	5 (45)	3 (38)	
Primary Limiting Factor	Psychographic	10 (91)	5 (62)	0.058
	Systemic	0 (0)	3 (38)	
	Other	1 (9)	0 (0)	
Age*		35 ± 14	49 ±15	
Norman* Corah Score		15 ± 3	13 ± 4	
*Represents mean and standard deviation				

Table 2: Multivariate Linear Regression with Norman Corah's Scale as Outcome

Variable	Estimate	Std. Error	t-value	p-value
Intercept	6.12	10.87	0.56	0.60
Age	0.00	0.12	0.06	0.95
Group (Study)	1.30	4.44	0.29	0.78
Sex (Male)	-4.01	5.31	-0.76	0.49
Race (White)	2.04	5.56	0.37	0.73
Education Level (High school)	-3.68	4.16	-0.89	0.43
Insurance Type (Public Payer)	3.97	5.57	0.71	0.52
Regular Dentist (Yes)	2.94	5.71	0.52	0.63
Last Dental Appointment (< 5 years)	8.83	10.66	0.83	0.45
Last Dental Appointment (< 6 months)	-0.74	5.29	-0.14	0.90
Last Dental Appointment (> 5 years)	1.86	5.84	0.32	0.77
Reason for Last Appt. (Routine visit)	1.04	4.91	0.21	0.84
Reason for Last Appt. (Treatment)	-0.35	4.01	-0.09	0.93
Primary Limiting Factor (Psychographic)	2.72	7.19	0.38	0.73
Primary Limiting Factor (Systemic)	7.49	8.57	0.87	0.43
Residual standard error:	4.49			
Multiple R-squared:	0.62			
p-value:	0.87			

Results

Descriptive statistics and group comparisons are outlined in **Table 1**. The covariates when compared between the two groups revealed no statistically significant differences across the covariates ($p > 0.058$).

For anxiety rating, more people with ADHD had severe anxiety 5 (45%) when compared to non-ADHD patients 3 (38%), and there was no significant difference between groups ($p = 0.687$). When the primary limiting factor for dental visits were considered, psychographic factors were most common, with 91% in the study group reporting those, compared to 62% in the control group ($p = 0.058$).

The results from the multivariate linear model are outlined in **Table 2**. The model had an R^2 of 0.62, and an adjusted R^2 of -0.70, indicating poor model fit after adjusting for the number of predictors. The overall model was not statistically significant ($p = 0.87$), suggesting that the variables combined do not have a significant effect on the Norman Corah's DAS-R score.

The original multiple linear regression model failed to produce valid results due to an issue with the number of predictor variables in relation to the small sample size. To fix this issue, a smaller model was created by trial and error and using the predictors present in Table 2.

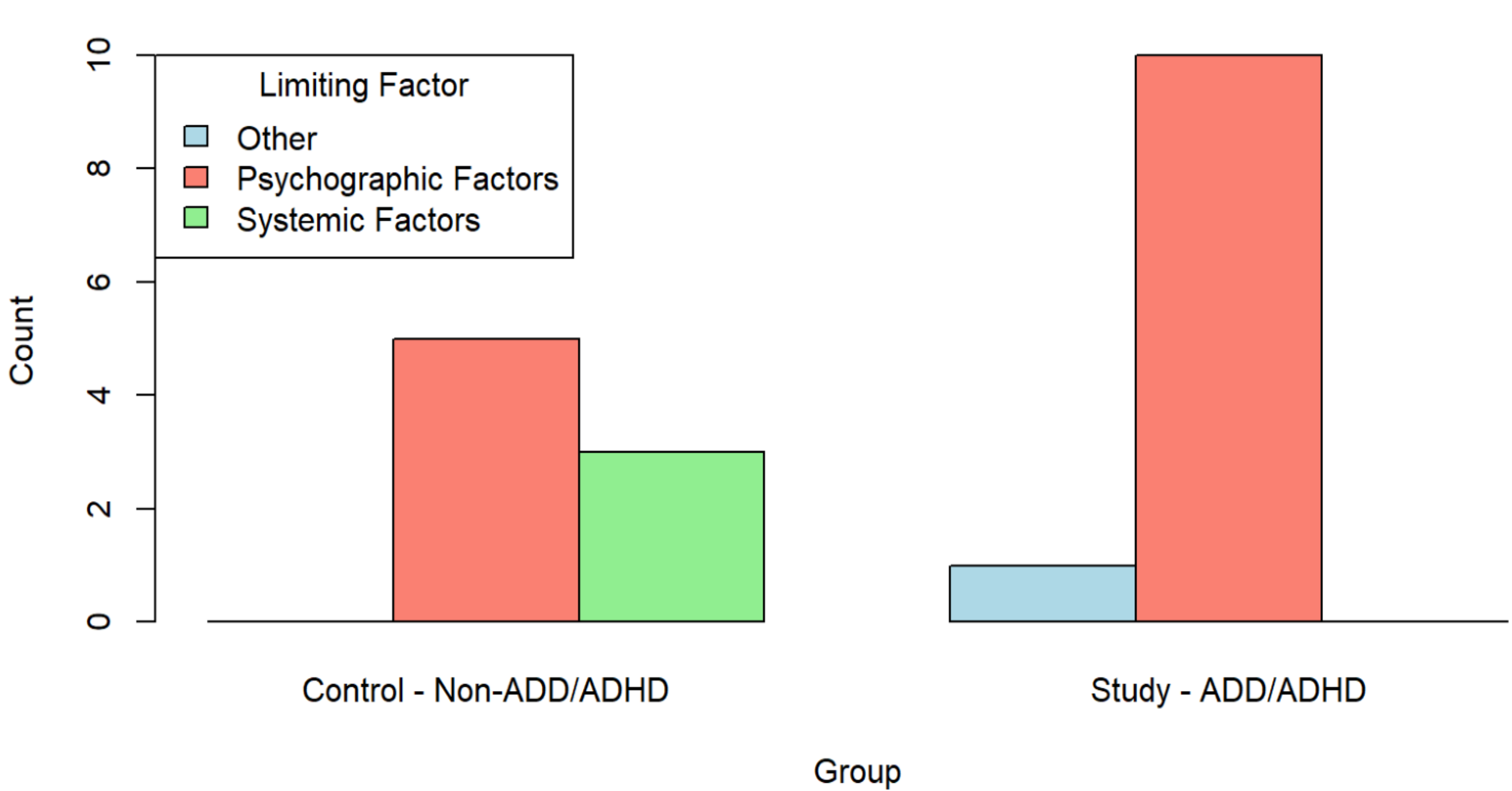
Conclusions

Due to the small sample size, it is hard to make any assertions with much certainty. However, with the data available it appears that there are no statistically significant differences in either the DAS-R scores or the Primary Limiting Factors between the study and control groups. Ultimately dental anxiety and/or limiting factors may not be able to explain the difference in dental attendance rates for those adults who have ADHD. A study with a larger sample size would be necessary to confirm this, however.

References

- Gemp, S. et al. (2023). Oral Health-Related Quality of Life in Adult Patients with Depression or Attention Deficit Hyperactivity Disorder (ADHD). *Journal of Clinical Medicine*, 12(22), 7192. <https://doi.org/10.3390/jcm12227192>
- Carlsson, V. et al. (2013). Attention deficit hyperactivity disorder and dental anxiety in adults: relationship with oral health. *European Journal of Oral Sciences*, 121(3pt2), 258–263. <https://doi.org/10.1111/eos.12016>

Primary Limiting Factors by Group (ADHD vs non ADHD)



Dental Anxiety Scores by Group (ADHD vs non ADHD)

