

Introduction

Depression, often undiagnosed, can affect all groups. It involves disturbances in emotional, cognitive, behavioral and somatic regulation.¹ Oral conditions that have been associated with depression include temporo-mandibular disorders, lichen planus, burning mouth syndrome, and periodontal diseases.^{1,3,4} It has been presumed that psychological conditions, such as depression, can lead to dental neglect.² We would expect children with depression to be less interested in performing activities of daily living. Our hypothesis is that children with depression would therefore have higher levels of dental plaque. In addition, depression with gingival irritation may be mediated by hypothalamic-pituitary-adrenal (HPA) activity, which may lower the host response to periodontitis-related bacteria.⁴

Hypothesis

Our hypothesis is that children who are depressed have higher dental plaque scores.

Purpose

The purpose was to determine if there was an association between dental plaque scores and depression in children ages 8-14.

Results

This was an observational study. Of the 50 participants, 26 were female and 24 were male. The average age was 10.62. The following are the breakdowns for race: 48% Caucasian, 28% African American, 12% Hispanic, 10% Bi-racial, 2% Asian. Six percent of the participants reported a history of depression, which our results could not confirm. After analysis from SPSS, there was no association between dental plaque scores and depression.

Material & Methods

A Mood and Feelings Questionnaire (MFQ)-Short Version was completed by 50 children. The questionnaire had 13 questions that consisted of a series of descriptive phrases regarding how the subject has been feeling or acting recently. The scores ranged from 0-27. A Quigley and Hein plaque index score was calculated by using disclosing solution on the maxillary and mandibular anterior teeth. Scores ranged from 0-5.

Child Self-Report

MOOD AND FEELINGS QUESTIONNAIRE: Short Version

This form is about how you might have been feeling or acting **recently**.

For each question, please check (✓) how you have been feeling or acting ***in the past two weeks***.

If a sentence was not true about you, check NOT TRUE.
If a sentence was only sometimes true, check SOMETIMES.
If a sentence was true about you most of the time, check TRUE.

Score the MFQ as follows:
NOT TRUE = 0
SOMETIMES = 1
TRUE = 2

To code, please use a checkmark (✓) for each statement.	NOT TRUE	SOME TIMES	TRUE
1. I felt miserable or unhappy.			
2. I didn't enjoy anything at all.			
3. I felt so tired I just sat around and did nothing.			
4. I was very restless.			
5. I felt I was no good anymore.			
6. I cried a lot.			
7. I found it hard to think properly or concentrate.			
8. I hated myself.			
9. I was a bad person.			
10. I felt lonely.			
11. I thought nobody really loved me.			
12. I thought I could never be as good as other kids.			
13. I did everything wrong.			

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MFQ Score:

Score 0-4- minimal or no depression; monitor, may not require treatment

Score 5-9- mild depression; use clinical judgement (symptom duration, functional impairment) to determine necessity of treatment

Score 10-14- moderate depression; use clinical judgement (symptom duration, functional impairment) to determine necessity of treatment

Score 15-19- moderately severe; warrants active treatment with psychotherapy, medications, or combination

Score 20-27-severe; warrants active treatment with psychotherapy, medications, or combination

Plaque Score:

Score 0- no plaque

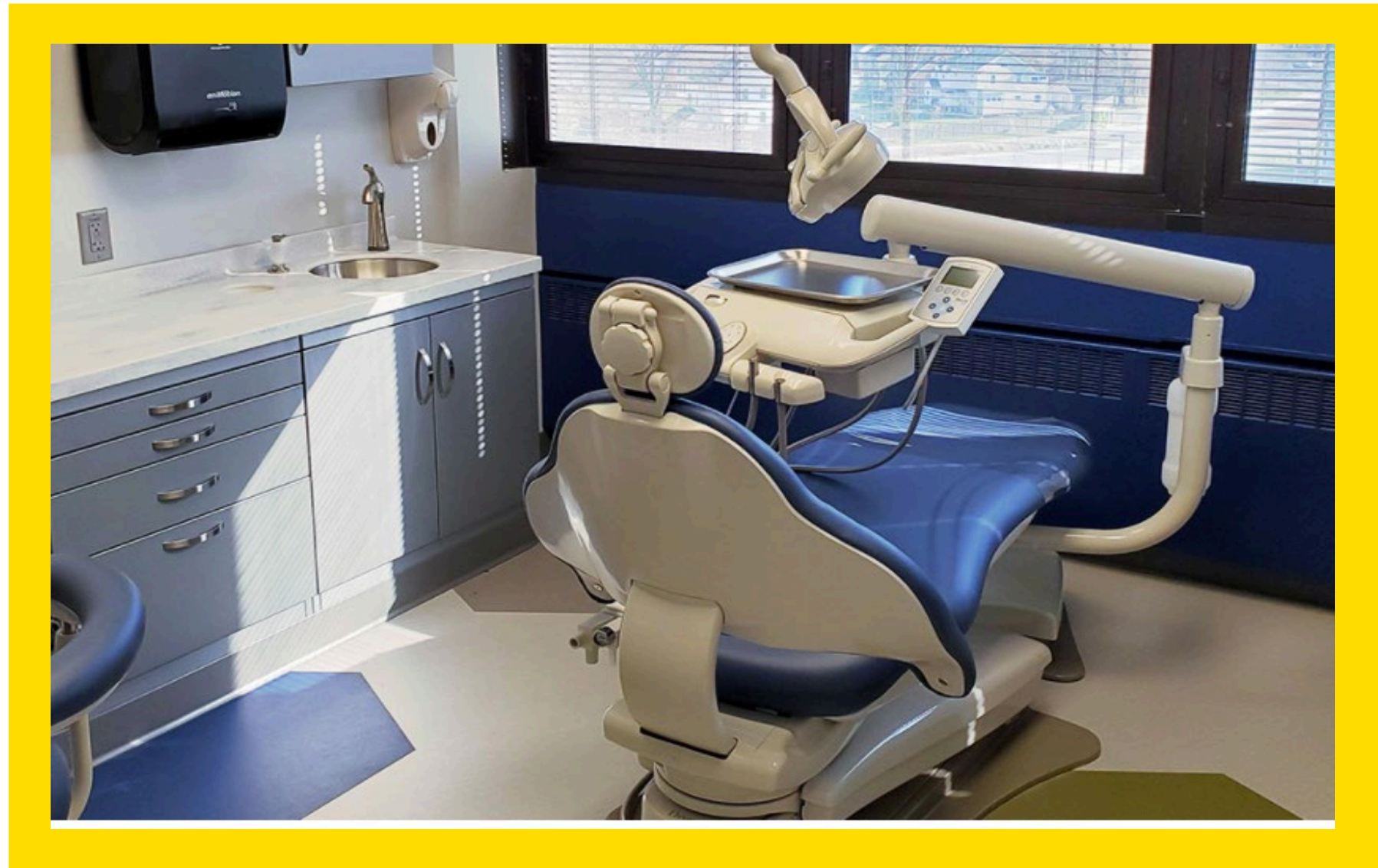
Score 1- flecks of stain of the gingival margin

Score 2- definitive line of plaque on gingival margin

Score 3- gingival third of surface

Score 4- two-thirds of surface

Score 5- greater than 2 two-thirds of the surface



Results

A MFQ score of 12 or higher may indicate the presence of depression. The average score on the MFQ for females was 4.42 and for males it was 3.67, which indicated minimal or no depression. The mean plaque index score for females was 2.9038 and for males it was 3.2171. A student's t-test was run using SPSS to compare the findings. There was no difference in the MFQ scores between males and females. There was no difference in dental plaque scores between males and females. There was no association between MFQ and dental plaque scores.

Discussion

While there were no significant findings in the present study, our hopes are that this could be a pilot study for future like-minded research. Our goal would be to identify early signs of depression and refer the child to the appropriate provider, as children may see their dentist more often than their primary care provider. Our study may have been affected by a small sample size. There may have been confounders present during the study. Parents may not always provide a complete medical history. Anecdotally, parents of the children that had higher dental plaque levels on clinical exam declined to participate in the study.

Conclusion

Based on the findings from this study, there is no association between dental plaque scores and depression, adjusting for gender and patient age. Future projects may include a larger sample size, and also indicating how often a patient is brushing their teeth before determining if they have symptoms of depression. We may have achieved different results if we had used the Patient Health Questionnaire-9. Initially we had requested this survey, but it was declined by the IRB due to a question regarding suicide as we are not trained to counsel patients who are depressed or suicidal. A multidisciplinary study may prove to be beneficial.

References:

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4. Klages, U., A.G. Weber, and H. Wehrbein, *Approximal plaque and gingival sulcus bleeding in routine dental care patients: relations to life stress, somatization and depression*. J Clin Periodontol, 2005. **32**(6): p. 575-82.