Open Access
Journal of the Faculty of Medicine Baghdad
Print ISSN: 0041-9419-Online ISSN: 2410-8057
DOI: https://doi.org/10.32007/jfacmedbagdad.6622220
Research Article

The Effect of Emotional Abuse on Periodontal Status and Salivary Resistin

Qabas F. Sami*[1], Ban S. Diab[1]
[1]*Department of Pediatric and Preventive Dentistry, College of Dentistry, University of Baghdad, Baghdad, Iraq.*

Received: Sept. 2023
Revised: Mar. 2024
Accepted: Mar. 2024
Published: July. 2024

Abstract:

Background: Emotional abuse is a widespread form of child abuse. It is suggested that the adverse outcomes from all forms of abuse mostly result from the emotional impacts. Resistin, a polypeptide high in cysteine, can serve as a valuable biochemical indicator of periodontal tissue damage when detected in the saliva.

Objective: To assess the relationship of emotional abuse with periodontal status and salivary resistin levels.

Methods: This cross-sectional comparative study included 522 intermediate school students aged 13-15 years in Kirkuk/Iraq. Information on emotional abuse was obtained using Glaser criteria which is a self-administered, structured, questionnaire form. The levels of emotional abuse were categorized into mild (score between 24-26), moderate (score between 27-42), and severe (score between 43-72). Periodontal health was assessed by using the community periodontal index (CPI). Non-stimulated saliva was collected and salivary resistin levels were evaluated using an enzyme-linked immunosorbent assay (ELISA).

Results: The most common level of abuse was moderate. The largest percentages of participants with dental calculus were observed in moderate (48.2%) and severe (57.5%) abuse groups and the highest mean number of sextants with gingival bleeding was observed in participants who experienced a moderate level of abuse (0.34). While the level of resistin was higher in the mild abuse group (237.06), all of its relationships with the periodontal condition were non-significant.

Conclusion: Emotional abuse affects salivary resistin levels but has no obvious effect on periodontal status. Non-significant correlations were observed between salivary resistin levels and the levels of abuse with periodontal conditions.

Keywords: Emotional abuse; Child abuse; Periodontal disease Saliva; Resistin.

Introduction:

All forms of child abuse, including physical and sexual abuse as well as neglect, occur simultaneously with emotional abuse (1). It is one of the most harmful forms of abuse, but it is also one of the least recognized causes of trauma. Because of its insidious nature, emotional abuse can go undetected for a long time even when it has severe consequences for an adult victim (2). Emotional abuse is frequently disregarded due to the absence of a globally recognized term. Researchers may define "emotional abuse" based on either the behaviors of victims or the effects, depending on their specific area of study (3). Due to the broad scope of the term "abuse," scholars have employed many alternative names such as "emotional abuse," "psychological maltreatment," "psychological abuse," and "verbal abuse." Glaser (4) presents an alternative framework for assessing emotional abuse, excluding any consideration of parental behavior or relationships between parents and children. Periodontal disease, including gingivitis and periodontitis, is one of widespread diseases in the world 5, and its prevalence varies by gender, ethnicity, geographic area, and socioeconomic status. Some conditions such as nutritional insufficiency can predispose an individual to develop periodontitis or exacerbate existing periodontitis (6). Several studies have examined the relationships between psychological and social factors and the development of periodontal disease, and have reported that patients who have inadequate coping strategies and particular emotional behaviors (e.g., anger) are at a greater risk of developing severe periodontal diseases (7). Other studies have found associations between exposure to abuse and poor oral health behaviors and outcomes (8). For instance, when parents show a lack of motivation and interest in preserving the oral health of child victims of abuse, and when the children themselves have low self-esteem, it can lead to elevated levels of gingivitis in comparison to children who have not experienced violence (9). Minhas et al 8 reported that exposure to psychological and domestic abuse is linked to a higher likelihood of having periodontal disease, which includes periodontitis and/ or gingivitis. Others have reported that immunity can be greatly impaired by psychological abuse which can promote the progression of periodontal infections (10).
Depression is also biologically linked to oral health and overall quality of life, and researchers have found

* *Corresponding author: qabasfakhri72@gmail.com*

that stressful circumstances can negatively affect gingival tissue (11,12,13). The effects of stress on periodontal tissues involve reduced salivary flow, which can enhance dental plaque formation (7). Decreased stressors in the social environment are connected with positive attitudes to health in general including oral and thus gingival health (14).

Saliva is an ideal biological fluid for medical diagnosis as it is inexpensive to sample, and collection is non-invasive, painless, and easy for individuals of all ages, including small children and the elderly (15). The composition of different compounds in the saliva serves as an indicator of an individual's overall health and can be utilized to promptly and effortlessly identify pathological alterations in humans (16).

Resistin is a polypeptide rich in cysteine, that is commonly referred to as a secretory factor particular to adipose tissue (17,18). The typical serum concentration of human resistin falls within the range of 7 to 22 ng/mL (19). Resistin is mostly released by immunological mononuclear cells in humans, which are responsible for various pro-inflammatory effects 20. This peptide is minimally expressed, if at all, in human adipose cells, but it is abundantly expressed in mononuclear leukocytes, macrophages, spleen, and bone marrow cells (21). The expression of resistin in human peripheral blood mononuclear cells is increased by pro-inflammatory cytokines such as IL-1, IL-6, and TNF-α (22). Thus, resistin likely plays a significant function in inflammation in humans.

A study was carried out by Abdalla et al (23); on measuring resistin levels in the saliva and examining the correlation between its levels in saliva and blood serum using a commercially available enzyme immunoassay technique. They found a strong positive link between the levels of resistin in the blood and saliva, with no notable correlation observed between these levels and age, body fat percentage, or BMI. The serum-to-salivary ratio of resistin was 0.2. This correlation between salivary and serum levels of resistin suggests that resistin is transferred from the blood to the saliva. This finding supports the potential use of salivary resistin levels rather than serum levels for early detection of disease. Sabir and Ahmed (24) have reported that salivary resistin could serve as a valuable biochemical indicator of periodontal tissue damage. Indeed, others have found that salivary resistin levels are significantly higher among individuals with chronic periodontitis, as compared to those with gingivitis and individuals in a healthy control group (25).

Individuals who have experienced childhood abuse may have lasting negative physiological impacts as a result of the very stressful early-life circumstances they have endured. They are significantly more susceptible to illnesses such as obesity and metabolic disorders (26). Childhood abuse, as well as other diseases including depression and psychological stress, is marked by a significant pro-inflammatory state (27). Researchers have investigated whether individuals who have experienced childhood abuse exhibit elevated levels of resistin, in addition to the previously observed inflammatory abnormalities. Lehto et al. (28); have documented a direct association between levels of resistin and childhood maltreatment. However, it has been suggested that this association is due to low concentrations of the anti-inflammatory biomarker adiponectin. Reduced levels of adiponectin can result in decreasing the ability to counteract inflammation, hence increasing the vulnerability to conditions that exhibit significant pro-inflammatory characteristics, both physically and psychologically.

To the best of our knowledge, no Iraqi study has assessed the emotional abuse effect on periodontal status or assessed its correlation to salivary resistin levels. For that reason, this study aimed to detect the influence of emotional abuse on periodontal status and salivary resistin levels.

Participants and methods

A cross-sectional comparative study was conducted on 522 female intermediate school students aged 13-15 years in Kirkuk, Iraq, who were from different socioeconomic backgrounds. The study was conducted from November 2022 to February 2023. Approval to conduct the study was obtained from Kirkuk Directorate of Education which helped to ensure the cooperation of school staff.

Assessment of emotional abuse: The Glaser criteria 4, were used to assess emotional abuse. This tool consists of 44 questions answered on a Likert scale. The original English version of the emotional abuse questionnaire was translated by experts into the Arabic language and the number of questions was reduced to (30); using input from psychologists and psychiatrists. As the reliability and validity of this questionnaire needed to be assessed, it was initially administered to (150 female students) and the answers were sent to a group of experts (psychologists and psychiatrists) in the College of Educational Psychology / Department of Psychological Research at the University of Baghdad for revision and assessment. These experts adjusted the questions to improve compatibility with the Iraqi community and to improve the level of students' understanding of the questions. Ultimately, the number of questions was reduced to (24).

Before collecting the data, the students were informed of the nature of the study, were told that their data would be kept confidential, only used for scientific research purposes, and that it would not affect their academic evaluations. The students were also allowed to ask any questions at this stage. All students were required to have a consent form signed by their parents, before completing the questionnaire. After calculating the score for each case sheet that the students filled out, certain answers received a reverse degree and then the final score was determined for each student. The levels of emotional abuse were categorized into:

- Mild if the score on the questionnaire was 24-26.

- Moderate if the score was 27-42.
- Severe if the score was 43-72.

The maximum possible score on the questionnaire was (72) degrees for each paper of the questionnaire. A subsample of 88 students from the total of 522 was chosen for saliva collection (44 experiencing mild abuse and 44 experiencing severe abuse).

Assessment of periodontal health

Periodontal health was assessed using the community periodontal index (CPI) which was modified by the WHO in 1997 29. The CPI probe is unique in that it is light-weighted, has a 0.5 mm ball at the edge, and is graded, with a ring of black separating 3.5 and 5.5 mm and circles 8.5 and 11.5 mm from the edge 30. For subjects under the age of 20 years, only six index teeth 16, 11, 26, 36, 31 and 46 (maxillary right first molar, maxillary right central incisor, maxillary left first molar, mandibular left first molar, mandibular left central incisor, mandibular right first molar) are examined. This modification is made to avoid scoring the deepened sulci associated with eruption as a periodontal pocket. For the same reason, when children under the age of 15 are examined, the periodontal pocket should not be recorded, i.e. only bleeding and calculus should be considered. Periodontal health status was coded according to the following criteria Table (1):

Table1: Periodontal health status code

Code	Definition
0	Healthy (no bleeding, no calculus)
1	Immediate bleeding was noted following probing
2	Calculus was discovered during the probing, but the entire black band on the probe was visible

After examination, the participants received instructions about how to keep their mouth clean and were informed about the importance of teeth brushing to prevent the formation of dental plaque that causes gingivitis and periodontitis.

Salivary resistin measurement: Students were directed to rinse their mouths with water approximately 5 minutes before delivering the saliva sample. Non-stimulated saliva was obtained by allowing it to passively accumulate in a disposable collection cup, following the saliva collection procedures established by the University of South California School of Dentistry31 as used in a prior study 32. Following the collection process, the salivary samples underwent centrifugation at a speed of 2000-3000 rpm for 20 minutes. The resulting liquid portion, known as the supernatant, was carefully transferred into sterile Eppendorf tubes. These tubes were then labeled with unique codes assigned to each student and stored at a temperature of -20°C until they could be subjected to additional analysis. The measurement of human resistin was conducted using an enzyme-linked immunosorbent assay (ELISA) by the instructions provided by the manufacturer.

Statistical analysis

Data analyses were performed using the statistical package for social sciences SPSS v.22 (Chicago, Illinois, USA). For quantitative variables, the means, and standard errors (SE) were calculated, while frequencies and percentages were used for categorical variables. Independent sample t-tests were used for comparisons between two means. Pearson's correlation was used to determine the linear correlation between two quantitative variables. ANOVA test was used for a quantitative dependent variable by a single factor (independent) variable. The Chi-square was used for analyses of contingency tables between two categorical data when the sample size was large. A P value of ≤ 0.05 was considered statistically significant.

Results

The levels of abuse across ages are shown in Table 2. For the total sample (n = 522), the highest reported level of abuse was moderate (75.1%) followed by severe (15.3%) and mild (9.6%). The same pattern was seen across all age groups with no significant association between age and abuse level.

Table 2. Distribution of the levels of abuse across ages

Abuse level	Age (Years)								Chi square	p value
	13		14		15		Total			
	n	%	n	%	n	%	n	%		
Mild	20	8.1	18	13.1	12	8.7	50	9.6		
Moderate	195	79.0	98	71.5	99	71.7	392	75.1	5.941	0.204
Severe	32	13.0	21	15.3	27	19.6	80	15.3		
Total	247	47.3	137	26.3	138	26.4	522	100.0		

The CPI scores across the abuse levels are shown in Table 3. Generally, across all abuse levels, the most common
CPI was score 2 (dental calculus) followed by score 0 (healthy gingiva), and score 1 (bleeding gingiva). There was no significant association between CPI scores and the levels of abuse.

'Table 3. Distribution of CPI scores across abuse levels

CPI score	Abuse level						Chi square	p-value
	Mild		Moderate		Severe			
	n	%	n	%	n	%	6.324	0.176
0	19	38.0	164	41.8	27	33.8		
1	1	2.0	39	10,0	7	8.8		
2	30	60.0	189	48.2	46	57.5		

Table 4 shows that the mean number of sextants with CPI 0 (healthy gingiva) was higher among individuals experiencing a moderate level of abuse. This pattern of results was also observed for the mean number of

sextants with CPI 1 (bleeding gingiva), while for CPI 2 (dental calculus) the mean number of sextants was higher for the mild level of abuse. However, the mean number of sextants did not differ significantly across the levels of abuse.

Table 4. Mean values of sextants at each CPI score across abuse levels

CPI score	Abuse level						F	P-value
	Mild		Moderate		Severe			
	Mean	SE	Mean	SE	Mean	SE		
CPI 0	4.72	0.216	4.84	0.068	4.44	0.117	0.317	0.728
CPI 1	0.18	0.062	0.34	0.036	0.23	0.056	1.881	0.153
CPI 2	1.14	0.090	0.85	0.056	1.04	0.035	2.012	0.135

Table 5 displays the differences in resistin levels between the groups with mild and severe abuse. Mild abuse was associated with greater mean salivary resistin levels than severe abuse (p=0.018).

Table 5. Mean salivary resistin levels in mild and severe abuse groups

Saliva Sample	Abuse					
	Mild		Severe			
	Mean	SE	Mean	SE	t	p-value
Resistin (ng/L)	237.06	20.518	178.78	13.123	2.415	0.018

The correlations between salivary resistin levels with periodontal health status across mild and severe abuse groups are displayed in Table 6. Salivary resistin levels were negatively correlated with CPI 1 (gingival bleeding) and CPI 2 (dental calculus) at the mild level of abuse and positively correlated with CPI 0 (healthy gingiva) while, at a severe level of abuse they were negatively correlated with CPI 0 and CPI 1 and positively correlated with CPI 2. However, all correlations were non-significant.

Table 6. Correlation of salivary resistin levels with periodontal parameters across the abuse level

Abuse	CPI	Resistin	
		r	p
Mild	CPI 0	0.101	0.519
	CPI 1	-0.058	0.712
	CPI 2	-0.005	0.975
Severe	CPI 0	-0.031	0.838
	CPI 1	-0.064	0.677
	CPI 2	0.067	0.660

Discussion:

In the present study, a moderate level of emotional abuse was the most commonly observed type among Iraqi children in Kirkuk. These results are in disagreement with a previous Iraqi study 33 which reported that the percentage of children experiencing severe abuse was higher than that for mild abuse. This may be attributed to life difficulties and stress making parents psychologically tense, which is reflected on children and can affect their mental health (34,35). A study conducted by Dye in 2020 reported that emotional abuse has moderate positive correlations with depression, anxiety, stress, and neurotic personality (36).

The results of the current study with the highest percentages of CPI 2 (dental calculus) found in the moderate and severe levels, and the highest mean number of sextants with CPI 1 (gingival bleeding) being in moderate levels of abuse are in agreement with those of previous studies (37,38). The effects might be ascribed to the emotional repercussions and diminished self-worth endured by abuse victims, leading them to disregard their overall and dental healthcare. Parents of abused children may be less inclined to prioritize the oral health of their children and have a reduced inclination to seek dental care (39). In addition, many abused children may fear dental treatment as a result of loneliness or a lack of emotional support from parents, which can lead to a failure to return to the dentist and even rejection of a proposed treatment plan (9). These same arguments were brought up in an earlier systematic analysis that analyzed the causes and manifestations of dental neglect (37,38).

The current study revealed that resistin levels were higher at the mild level of abuse compared to the severe level, suggesting that emotional abuse decreased the levels of resistin. This contradicts the findings of Lehto (28), who concluded that there was an association between low levels of adiponectin and childhood abuse, while serum resistin levels showed no such association. Nevertheless, this outcome aligns with the findings of Levandowski et al 40, who found that those who experienced childhood maltreatment exhibited lower plasma levels of resistin compared to those who did not. Other research also reported that individuals who have experienced childhood maltreatment or are currently experiencing psychiatric symptoms like depression exhibit an abnormal release of resistin (41,42).

In the present study, no significant relationships were observed between periodontal condition and abuse scores with salivary resistin levels. The findings of this study contrast a recent publication that found a significant positive correlation between salivary resistin levels and gingival crevicular fluid levels, mean periodontal pocket depth, clinical attachment loss, and the extent of the periodontal inflamed surface area. According to the findings of other studies, high concentrations of resistin in the saliva are associated with severe local inflammation in the periodontium. Furthermore, these findings revealed that resistin seeps from the gingival crevicular fluid into the oral fluid, and it is produced by immune cells that respond to periodontopathic bacteria (43).

Conclusion:

Emotional abuse affects salivary resistin levels but has no obvious effect on periodontal status. Non-significant correlations were observed between

salivary resistin levels and the levels of abuse with periodontal conditions.

Acknowledgments: The authors are grateful to Assist. Prof. Dr. Saif Mohammad at the Center for Psychological Research, University of Baghdad, for his valuable advice and assistance in assessing the reliability and validity of the questionnaire, and we appreciate everyone who participated in this study.

Authors' declaration:
We affirm that all the tables included in the manuscript belong to us. The approval of ethical considerations is signed by the authors. Ethical Clearance: According to the code number (project No. 684322), the project was accepted by the University of Baghdad's internal ethics committee for dentistry.
Conflicts of interest: None
Funding: None.

Author Contributions:
Study conception & design: (Ban S. Diab). Literature search: (*Qabas F. Sami*, Ban S. Diab). Data acquisition: (*Qabas F. Sami*). Data analysis & interpretation: (*Qabas F. Sami*). Manuscript preparation: (*Qabas F. Sami*& Ban S. Diab). Manuscript editing & review: (*Qabas F. Sami*& Ban S. Diab).

References

1. Syed SA, Nemeroff CB. Early Life Stress, Mood, and Anxiety Disorders. Chronic Stress. 2017;1. https://doi.org/10.1177/2470547017694461
2. Brassard MR, Hart SN, Glaser D. Psychological maltreatment: An international challenge to children's safety and well-being. Child Abuse Negl. 2020;110(Pt 1):104611. https://doi.org/10.1016/j.chiabu.2020.104611
3. Hornor G. Emotional maltreatment. J Pediatr Health Care.2012;26(6):436-42. https://doi.org/10.1016/j.pedhc.2011.05.004
4. Glaser D. Emotional abuse and neglect (psychological maltreatment): a conceptual framework. Child Abuse Negl. 2002;26(6-7):697-714. https://doi.org/10.1016/S0145-2134(02)00342-3
5. Scholz M, Reske T, Böhmer F, Hornung A, Grabow N, Lang H. In vitro chlorhexidine release from alginate based microbeads for periodontal therapy. PloS One. 2017;12(10):e0185562. https://doi.org/10.1371/journal.pone.0185562
6. Del Pinto R, Pietropaoli D, Munoz-Aguilera E, D'Aiuto F, Czesnikiewicz-Guzik M, Monaco A, et al. Periodontitis and Hypertension: Is the Association Causal? High Blood Press Cardiovasc Prev. 2020;27(4):281-289. https://doi.org/10.1007/s40292-020-00392-z
7. Corridore D, Saccucci M, Zumbo G, Fontana E, Lamazza L, Stamegna C, et al. Impact of Stress on Periodontal Health: Literature Revision. Healthcare (Basel). 2023;11(10):1516 .https://doi.org/10.1016/j.heliyon.2022.e12631
8. Minhas S, Qian Hui Lim R, Raindi D, Gokhale KM, Taylor J, Bradbury-Jones C, et al. Exposure to domestic abuse and the subsequent risk of developing periodontal disease. Heliyon. 2022;8(12):e12631.https://doi.org/10.1016/j.heliyon.2022.e12631
9. Buldur B, Büyükkök Ç, Cavalcanti AL. Knowledge, attitudes, and perceptions regarding child abuse and neglect among dentists in Turkey. Braz Oral Res. 2022;36:e001. https://doi.org/10.1590/1807-3107bor-2022.vol36.0001
10) Benoist HM, Seck-Diallo A, Diouf A, Yabbre S, Sembene M, Diallo PD. Profile of chronic and aggressive periodontitis among Senegalese. J Periodontal Implant Sci. 2011;41(6):279-84. https://doi.org/10.5051/jpis.2011.41.6.279
11. Abdulrazzaq N, Radhi NJ, Depression Status in Relation to Gingival Status and Salivary Magnesium Among 17 Years Old Secondary School Female in Baghdad City/Iraq, J Res Med Dent Sci. 2020;8(7):4-8. https://doi.org/10.26477/jbcd.v33i1.2921
12. Yaseen A, & Talib M. Prevalence and clinical characteristics of depression among elderly patients attending primary health care centers in Diyala Governorate. Journal of the Faculty of Medicine Baghdad.2023; 65(2) .https://doi.org/10.32007/jfacmedbagdad.2034
13. Mohammed I A, Hamdan AS, Jaber OA, & Abbas GH. Assessment of anxiety and depression status among health care workers from Baghdad post cure from COVID-19. Journal of the Faculty of Medicine Baghdad. 2021; 63(3). https://doi.org/10.32007/jfacmedbagdad.6331835
14. Ahmed SI, Sudhir KM, Reddy VCS, Kumar RVSK, Srinivasulu G, Deepthi A. Impact of Sense of Coherence on Oral Health among Bus Drivers: A Cross-Sectional Study. J Int Soc Prev Community Dent. 2018;8(2):145-152. https://doi.org/10.4103/jispcd.jispcd_1_18
15. Chojnowska S, Baran T, Wilińska I, Sienicka P, Cabaj-Wiater I, Knaś M. Human saliva as a diagnostic material. Adv Med Sci. 2018;63(1):185-191.https://doi.org/10.1016/j.advms.2017.11.002
16. Derruau S, Robinet J, Untereiner V, Piot O, Sockalingum GD, Lorimier S. Vibrational Spectroscopy Saliva Profiling as Biometric Tool for Disease Diagnostics: A Systematic Literature. Molecules. 2020;25(18):4142. https://doi.org/10.3390/molecules25184142
17. Shi Y, Zhu N, Qiu Y, Tan J, Wang F, Qin L, et al. Resistin-like molecules: a marker, mediator and therapeutic target for multiple diseases. Cell Commun Signal. 2023;21(1):18 .https://doi.org/10.1186/s12964-022-01032-w

18. Kirichenko TV, Markina YV, Bogatyreva AI, Tolstik TV, Varaeva YR, Starodubova AV. The Role of Adipokines in Inflammatory Mechanisms of Obesity. Int J Mol Sci. 2022; 29;23(23):14982. https://doi.org/10.3390/ijms232314982
19. Askin L, Abus S, Tanriverdi O. Resistin and Cardiovascular Disease: A Review of the Current Literature Regarding Clinical and Pathological Relationships. Curr Cardiol Rev. 2022;18(1):e290721195114. https://doi.org/10.2174/1573403x17666210729101120
20. Kaminska B, Kurowicka B, Kiezun M, Dobrzyn K, Kisielewska K, Gudelska M, et al. The Role of Adipokines in the Control of Pituitary Functions. Animals (Basel). 2024;14(2):353. https://doi.org/10.3390/ani14020353
21. Behnoush AH, Maroufi SP, Reshadmanesh T, Mohtasham Kia Y, Norouzi M, Mohammadi SM, et al. Circulatory resistin levels in inflammatory bowel disease: a systematic review and meta-analysis. BMC Gastroenterol. 2024;24(1):107. https://doi.org/10.1186/s12876-024-03199-7
22. Taouis M, Benomar Y. Is resistin the master link between inflammation and inflammation-related chronic diseases? Mol Cell Endocrinol. 2021;533:111341. https://doi.org/10.1016/j.mce.2021.111341
23. Abdalla MMI. Salivary resistin level and its association with insulin resistance in obese individuals. World J Diabetes. 2021; 15;12(9):1507-1517. https://doi.org/10.4239/wjd.v12.i9.1507
24. Ahmed MA, Sabir DA. An assessment of salivary leptin and resistin levels in type two diabetic patients with chronic periodontitis (a comparative study). JBCD, 2015, 27.4: 107-114. https://jbcd.uobaghdad.edu.iq/index.php/jbcd/article/view/958
25. Karam TA, Al-Safi KA. An Evaluation of Serum and Salivary Adipokines (Leptin and Resistin) Levels in Periodontal Health and Disease. J Bagh Coll Dent [Internet]. 2015;27(4):119-24. Available from: https://jbcd.uobaghdad.edu.iq/index.php/jbcd/article/view/960
26. Bödicker C, Reinckens J, Höfler M, Hoyer J. Is Childhood Maltreatment Associated with Body Image Disturbances in Adulthood? A Systematic Review and Meta-Analysis. J Child Adolesc Trauma. 2021; 7;15(3):523-538. https://doi.org/10.1007/s40653-021-00379-5
27. Gustafson B. Adipose tissue, inflammation and atherosclerosis. J Atheroscler Thromb. 2010;17(4):332-41. https://doi.org/10.5551/jat.3939
28. Lehto SM, Elomaa AP, Niskanen L, Herzig KH, Tolmunen T, Viinamäki H, et al. Serum adipokine levels in adults with a history of childhood maltreatment. Prog Neuropsychopharmacol Biol Psychiatry. 2012;37(2):217-21. https://doi.org/10.1016/j.pnpbp.2012.01.016
29. WHO, Oral Health Survey Basic Methods (4th edition), WHO, World Health Organization, Geneva, Switzerland (1997). WHO Expert Group on Equipment and Materials for Oral Care (EGEMOC). The periodontal probe for use with the community periodontal index of treatment needs (CPITN). Geneva, World Health Organization,1990 (unpublished document WHO/ORH/EGEMOC/CPITN1990; available on request from Oral Health, World Health Organization, 1211 Geneva 27, Switzerland). https://www3.paho.org/hq/index.php?option=com_docman&view=download&alias=33452-oral-health-surveys-452&category_slug=school-facilities-water-sanitation-hygiene-practices-8520&Itemid=270&lang=es
30. Thakur RK, Yadav BK, Sultana R, Afridi SK, Das D, Sahoo SK. Influence of Periodontal Infection as a Possible Risk Factor for Preterm Low Birth Weight. J Pharm Bioallied Sci. 2020;12(Suppl 1):S613-S618. https://doi.org/10.4103%2Fjpbs.JPBS_73_20
31. Navazesh M, Kumar SK; University of Southern California School of Dentistry. Measuring salivary flow: challenges and opportunities. J Am Dent Assoc. 2008;139 Suppl:35S-40S. https://doi.org/10.14219/jada.archive.2008.0353
32. Ameer SA, Alhuwaizi AF, Saloom HF. Effect of Orthodontic Force on Salivary Levels of Lactate Dehydrogenase Enzyme. Indian Journal of Public Health. 2019; 10.10: 2729. https://doi.org/10.1038/35053000
33. Almirhij WM, Diab BS. The Impact Of Child Abuse and Neglect on Oral Habit among 10-11 Years Old Primary School Students in Baghdad/Iraq. Indian Journal of Forensic Medicine & Toxicology. 2020; 14.4.
34. Mohammed SM, Diab BS. The impact of depression status on dental caries severity among internally displaced people in Baghdad/Iraq. J Bagh Coll Dent [Internet]. 2019 ;31(1):9-13. https://doi.org/10.26477/jbcd.v31i1.2571
35. Al-Bazaz NA, Radhi NJ. Depression status in relation to dental caries and salivary C-Reactive Protein among 17 years old secondary school female in Baghdad City/Iraq. Journal of Baghdad College of Dentistry. 2021; 33.1: 6-11. https://doi.org/10.26477/jbcd.v33i1.2921
36. Dye HL. Is Emotional Abuse As Harmful as Physical and/or Sexual Abuse?. Journ Child Adol Trauma. 2020;**13**, 399–407 https://doi.org/10.1007/s40653-019-00292-y
37. Foláyan MO, Ramos-Gomez F, Fatusi OA, Nabil N, Lyimo GV, Minja IK, et al. Child dental neglect and legal protections: a compendium of briefs from policy reviews in 26 countries and a special administrative region of China. Front Oral Health. 2023;4:1211242. https://doi.org/10.3389/froh.2023.1211242

38. Girgla JK, Mahadeva S, Srivastava M, Sharma L, Kedia S, Singh SS. Exploring the Connection Between Domestic Violence and Masticatory Outcomes in the Pediatric Population: A Systematic Review. Cureus. 2023; 9;15(10):e46764. https://doi.org/10.7759/cureus.46764

39. Vigu A, Stanciu D. When the fear of dentist is relevant for more than one's oral health. A structural equation model of dental fear, self-esteem, oral-health-related well-being, and general well-being. Patient Prefer Adherence. 2019; 25;13:1229-1240. https://doi.org/10.2147/ppa.s209068

40) Levandowski ML, Viola TW, Tractenberg SG, Teixeira AL, Brietzke E, Bauer ME, et al. Adipokines during early abstinence of crack cocaine in dependent women reporting childhood maltreatment. Psychiatry Res. 2013;210(2):536-40. https://doi.org/10.1016/j.psychres.2013.07.007

41. Permoda-Pachuta A, Malewska-Kasprzak M, Skibińska M, Rzepski K, Dmitrzak-Węglarz M. Changes in Adipokine, Resitin, and BDNF Concentrations in Treatment-Resistant Depression after Electroconvulsive Therapy. Brain Sci. 2023;22;13(10):1358. https://doi.org/10.3390/brainsci13101358

42. Lehto SM, Huotari A, Niskanen L, Tolmunen T, Koivumaa-Honkanen H, Honkalampi K, et al. Serum adiponectin and resistin levels in major depressive disorder. Acta Psychiatr Scand. 2010;121(3):209-15.https://doi.org/10.1111/j.1600-0447.2009.01463.x

43. Kamil MA, Peeran SW, Basheer SN, Elhassan A, Alam MN, Thiruneervannan M. Role of Resistin in Various Diseases with Special Emphasis on Periodontal and Periapical Inflammation–A Review. Journal of Pharmacy and Bioallied Sciences.2023; 15(Suppl 1), S31-S35. https://doi.org/10.4103/jpbs.jpbs_655_22.

How to Cite this Article:
Sami QF, Diab BS. The effect of emotional abuse on periodontal status in relation to salivary resistin. JfacMedBagdad. 2024(66);2.
Available from:
https://iqjmc.uobaghdad.edu.iq/index.php/19JFacMedBaghdad36/article/view/2220

تأثير الإساءة العاطفية على حالة اللثة وعلاقتها بمقاومة اللعاب

قبس فخري سامي[1] ، بان صاحب ذياب[1]
[1]قسم طب الأسنان الاطفال و الوقائي، كلية طب الأسنان، جامعةبغداد، بغداد، العراق

الخلاصة
الخلفية: الإساءة العاطفية هي شكل شائع جدًا من أشكال إساءة معاملة الأطفال. يقترح أن النتائج السلبية الناجمة عن جميع أشكال سوء المعاملة تنجم في الغالب عن التأثيرات العاطفية. الريسيستين هو متعدد الببتيد غني بالسيستين وقد تكون مستوياته في اللعاب علامة كيميائية حيوية مفيدة لتدمير أنسجة اللثة.
الهدف: تقييم آثار الإساءة العاطفية على حالة اللثة فيما يتعلق بمستويات الريسيستين في اللعاب.
المواد والطرق: شملت هذه الدراسة المقارنة 522 طالبة تتراوح أعمارهن بين 13-15 سنة من المدارس المتوسطة في كركوك / العراق. تم الحصول على معلومات عن الإساءة العاطفية باستخدام إستبيان منظم ذاتي الإدارة وتم تقييم صحة اللثة باستخدام مؤشر اللثة المجتمعي **(CPI)**. تم جمع اللعاب غير المحفز وقياس الريسيستين في اللعاب باستخدام مقايسة الماصة المناعية المرتبطة بالإنزيم.
النتائج: كان مستوى سوء المعاملة الأكثر شيوعا هو المستوى المتوسط. وقد لوحظت أكبر النسب المئوية للمشاركات اللواتي يعانين من التكلسات على الاسنان في مجموعات سوء المعاملة المعتدلة والشديدة ولوحظ أعلى عدد متوسط من السدسية مع نزيف اللثة في المشاركات اللواتي عانين من مستوى معتدل من سوء المعاملة. في حين أن مستوى الريسيستين كان أعلى في مجموعة سوء المعاملة الخفيفة، فإن جميع علاقاته بحالة اللثة كانت غير معنوية.
الإستنتاج: يؤثر الإيذاء العاطفي على مستويات مقاومة اللعاب ولكن ليس له تأثير واضح على حالة اللثة. وقد لوحظت ارتباطات غير هامة بين مستويات ريسيستين اللعاب ومستويات سوء المعاملة مع أمراض اللثة.
الكلمات المفتاحية: الإساءة العاطفية، إساءة الأطفال، أمراض اللثة، اللعاب، الريسيستين

.