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Original Research Paper

Treating Gingival Recession; A Cross-sectional Study to Assess the Knowledge and Practice among Saudi Dentists

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Introduction: Gingival recession is one of the most widespread esthetical and functional problems encountered by dentists, and there is still a challenge concerning the underlying cause and treatment options. There are 50% of subjects in the population who suffer from this condition. An expression commonly used to describe gingival recession is receding gums, which refers to the exposure of the roots of teeth caused by a loss of gum tissue and advancing gum tissue from the tooth's crown Method: This is a cross-sectional study conducted among Saudi dental professionals using an online survey, 336dentists from all over Saudi Arabia were utilized in this study. Results: Findings reported that a significant proportion of the sample was male (56.8%), working in the government sector and having experience of fewer than ten years. The majority of them marked their knowledge about the gingival recession as moderate. 39.6% of participants thought improper brushing was a common cause. A significant proportion was aware of Miller's classification. Hypersensitivity was the highest indication for root procedure, and traumatic occlusion was the leading risk factor for gingival recession. 39.3% of the population thinks gingival results from lip, tongue, or oral piercing, while 31.5% of them were not sure about the fact. 36.3% preferred surgery as the preferred treatment followed by photopolymer restoration, proclaim facets, and extraction, respectively. Conclusion: Our study findings reported that our population has moderate knowledge of the problem and the leading cause is improper brushing and periodontics diseases. The leading risk factor was traumatic occlusion, and the indication for root coverage was aesthetics. The preferred treatment option was surgery. They need more information about causes and treatment.

Keywords: Gingival recession, cross-sectional, Saudi dentists, knowledge.

INTRODUCTION

Gingival recession is one of dentists' most widespread esthetical and functional problems and is still a challenge concerning the underlying cause and treatment options. There are 50% of subjects in the population who suffer from this condition. An expression commonly used to describe gingival recession is receding gums, which refers to the exposure of the roots of teeth caused by a loss of gum tissue and advancing gum tissue from the tooth's crown (Shkreta et al., 2018).

It is not uncommon to observe gingival recession in daily clinical practice. Apical shifts of the gingival margin can lead to several problems, including dentin hypersensitivity, root caries, non-carious cervical lesions (NCCLs), and compromised aesthetics. It can experience recession with caries in the roots, abraded surfaces, esthetic defects, and root hypersensitivity. Periodontists aim to replace the lost attachment apparatus of teeth as part of their treatment (Imber & Kasaj, 2021; Jati et al., 2016).

Many factors contribute to the aetiology of this gingival recession, including trauma and periodontal disease. Treatment should be focused on preventing further disease progression and controlling symptoms. It is essential to consider the aesthetic concerns of the patient. Surgical treatment may be needed in some cases to cover exposed root surfaces exposed by the recession. Clinical reports vary from one surgical technique to another (Mythri et al., 2015).

There are many aspects to the gingival recession, making it an intriguing and complex issue. Due to sensitivity and aesthetics, patients frequently experience pain and discomfort with recession. The treatment of gingival recession has included various techniques coming from connective tissue grafting, flap design, orthodontics, and guided tissue regeneration. It is predictable and reliable to perform gingival

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grafting to treat recession. There are both direct and indirect causes of gingival recession. In some cases, orthodontic treatment may be able to prevent recession and even contribute to its healing, with or without periodontal therapy (Avinash, Malaippan & Dooraiswamy, 2017; Seong et al., 2019).

A study done in Karnataka, India, revealed that 33.3% of the participants (periodontists) were well aware of Cairo's classification of gingival recession, and 66.7% did not have any idea.32.5% mentioned the malpositioning of teeth to be the primary cause of the gingival recession. Regarding the general indication for root coverage procedures, periodontists (58.8%) and non-periodontists (41.1%) answered prevention of further progression of the gingival disease (43.6%) to be the most common reason (Nivethitha et al., 2021).

Another similar study in Nepal used an eight-item structured questionnaire to assess dental practitioners' knowledge and interest in gingival recession. In total, 250 dentists completed this survey during the four months. In the majority of the participants, general dentists were present. According to most participants, improper tooth brushing is one of the leading causes of gingival recession. Aesthetics was the most common reason for root coverage procedures (Mehta, 2015). Another study stated that according to most participants, improper tooth brushing is one of the leading causes of gingival recession regarding root coverage procedures and general indications. They suggested that traumatic occlusion can contribute to gingival recession. Furthermore, the participants revealed that the gingival recession was a sufficiently understood condition (Patel et al., 2011).

Benefits of the Study

This study's findings may help determine the treatment preferences of Saudi dentists towards gingival recession.

Scope of the Study

This study will focus mainly on the knowledge and practice of Saudi dental professionals.

Study Hypotheses

Knowledge about treating gingival recession is moderate. However, the practice is on the lower side.

Aims of the Study

- To determine the knowledge and practice of Saudi dentists towards the treatment of gingival recession.
- To compare the responses based on gender, work experience, and designation.

MATERIALS AND METHODS

Study Design

This cross-sectional study was conducted using an online survey among Saudi dental professionals.

Study Sample

336 students from all over Saudi Arabia were utilized.

Study Instrument

The online questionnaire consisted of questions related to demographic data followed by questions including knowledge and practice towards gingival recession and its treatment options.

Instrument Validity and Reliability

A pilot study was conducted by sending the survey to 20 participants. The data will be inserted in SPSS version 22 to determine the reliability using Chronbach's coefficient alpha (value: 0.712). The validity of the questionnaire was tested by sending it to experienced researchers in REU, but no changes were made.

Statistical Analysis

Collected data was analyzed using SPSS version 22, where descriptive and inferential statistics were conducted. Comparisons between groups were made with the value of significance kept under 0.05. Chi-square test was conducted to determine the comparisons.

RESULTS

In the present study, we investigate the knowledge and practice among dentists in Saudi Arabia about treating the gingival recession. In the first analysis of the research stats, the findings reported that a significant proportion of the sample was male (56.8%), working in the government sector, and having experience of fewer than 10 years. Most of them marked their knowledge about the gingival recession as moderate, and only 14% were highly aware. 39.6% of participants thought improper brushing was a common cause followed by periodontal diseases, abnormal tooth position, and high frenal attachment, respectively.

In the subsequent comparison analysis, we explored the non-significant differences across gender. The findings reported that the majority of both males and females were working in the government sector and had less than 10 years of experience. The majority of both groups marked their knowledge about the problem as moderate, but more females are at common knowledge compared to the male population. Regarding the cause, males think improper brushing while females think periodontal disease is the most common. The majority of the male population was aware of Miller's classification compared to females, while females were also aware of some other classifications than male.

Hypersensitivity was an indication of root coverage for females while aesthetics for males. Both groups held the same view about risk factors and thought traumatic occlusion was the biggest. Equal numbers of females were not sure and thought gingival recession was a result of lip and tongue piercing while males agreed with it as the cause of gingival recession. The preferred treatment for males was photopolymer while surgery for females. Both groups need more information about the causes and the treatment of the problem. In further analysis, we investigate the non-significant differences across the working sector. The findings reported that dentists working in the private sector have lesser experience than those working in public hospitals. Both groups marked their knowledge as moderate. Concerning the cause, dentists from the public sector thought improper brushing while the public sector thought of periodontal as the most common cause of the gingival recession.

Table 1 Demographics of the study participants

Variables	Frequency Percentage
Gender	
Male	191(56.8%)
Female	145(43.2%)
Working sector	
Private	147(43.8%)
Government	189(56.3%)
Working Experience	
Less than 10 years	246(73.2%)
More than 10 years	90(26.8%)
What is your perceived level of knowledge regarding the Gingival Recession?	
High	
Moderate	47(14%)
Low	175(52.1%)
	114(33.9%)
The most common cause for the Gingival Recession?	
Periodontal disease	
Abnormal tooth position	131(39%)
Improper tooth brushing	49(14.6%)
High Frenal attachment	133(39.6%)
	44(6.8%)
Do you know Miller's classification of Gingival Recession?	
Yes	124(36.9%)
No	116(34.5%)
Do not remember	81(24.1%)
I know another classification	15(4.5%)
Indication for Root Coverage procedure?	
Aesthetics	106(31.5%)
Hypersensitivity	109(32.4%)
Prevention of vitality of the tooth	73(21.7%)
Occlusal stability	48(14.3%)
Risk factor for Gingival Recession?	
Traumatic occlusion	130(38.7%)
Tooth position	101(30.1%)
Tooth vitality	57(17%)
Enamel hypoplasia	48(14.3%)
Is Gingival Recession a consequence of lip, oral, and tongue piercing?	
Yes	
No	132(39.3%)
Not sure	98(29.2%)
	106(31.5%)
What is the preferred treatment for the Gingival Recession?	
Gingival surgery	
Proclaim facets	122(36.3%)
Photopolymer restoration	72(21.4%)
Extraction	104(31%)
	38(11.3%)
Do you think you need more knowledge on the causes and treatment of the Gingival Recession?	
Yes	205(61%)
No	73(21.7%)
Not sure	58(17.3%)

Table 2 Comparison across Gender

Variables	Male	Female	p-value
Working sector			
Private	40.3%	48.3%	.145
Government	59.7%	51.7%	
Working Experience			
Less than 10 years	79.1%	65.5%	.006
More than 10 years	20.9%	34.5%	
What is your perceived level of knowledge regarding the Gingival Recession?			
High	11.5%	17.2%	.088
Moderate	57.1%	45.5%	
Low	31.4%	37.2%	
The most common cause for the Gingival Recession?			
Periodontal disease	36.1%	42.8%	
Abnormal tooth position	13.1%	16.6%	.064
Improper tooth brushing	45.5%	31.7%	
High Frenal attachment	5.2%	8.9%	
Do you know Miller's classification of Gingival Recession?			
Yes	41.9%	30.3%	
No	30.9%	39.3%	.015
Don't remember	25.1%	22.8%	
I know another classification	2.1%	7.6%	
Indication for Root Coverage procedure?			
Aesthetics	34.6%	27.6%	
Hypersensitivity	32.9%	31.7%	
Prevention of vitality of the tooth	20.9%	22.8%	.283
Occlusal stability	11.5%	17.9%	
Risk factor for Gingival Recession?			
Traumatic occlusion	43.9%	31.7%	.019
Tooth position	30.9%	28.9%	
Tooth vitality	15.2%	19.3%	
Enamel hypoplasia	9.9%	20%	
Is Gingival Recession a consequence of lip, oral, and tongue piercing?			.228
Yes	41.4%	36.6%	
No	30.9%	26.9%	
Not sure	27.7%	36.6%	
What is the preferred treatment for the Gingival Recession?			
Gingival surgery			
Proclaim facets	32.9%	40.7%	
Photopolymer restoration	20.4%	22.8%	.317
Extraction	34%	26.9%	
	12.6%	9.7%	
Do you think you need more knowledge on the causes and treatment of the Gingival Recession?			
Yes	61.8%	60%	.940
No	21.5%	22.1%	
Not sure	16.8%	17.9%	

Table 3 Comparison across the working sector

Variables	Private	Government	p-value
Working Experience			
Less than 10 years	59.1%	55.5%	.256
More than 10 years	40.9%	44.5%	
What is your perceived level of knowledge regarding the Gingival Recession?			
High	12.5%	17.2%	.098
Moderate	56.1%	45.5%	
Low	31.4%	37.2%	
The most common cause for the Gingival Recession?			
Periodontal disease	34.1%	44.8%	
Abnormal tooth position	15.1%	15.6%	.054
Improper tooth brushing	44.5%	32.7%	
High Frenal attachment	6.2%	8.9%	
Do you know Miller's classification of Gingival Recession?			
Yes			
No	40.9%	35.3%	.024
Don't remember	31.9%	34.3%	
I know another classification	24.1%	21.8%	
	3.1%	8.6%	
Indication for Root Coverage procedure?			
Aesthetics	36.6%	26.6%	
Hypersensitivity	30.9%	30.7%	
Prevention of vitality of the tooth	19.9%	21.8%	.342
Occlusal stability	12.5%	20.9%	
Risk factor for Gingival Recession?			
Traumatic occlusion	40.9%	33.7%	
Tooth position	32.9%	27.9%	.056
Tooth vitality	15.2%	19.3%	
Enamel hypoplasia	10.9%	21%	
Is Gingival Recession a consequence of lip, oral, and tongue piercing?			
Yes	43.4%	34.6%	.222
No	29.9%	27.8%	
Not sure	28.7%	37.6%	
What is the preferred treatment for the Gingival Recession?			
Gingival surgery			
Proclaim facets	32.9%	45.7%	
Photopolymer restoration	20.4%	20.8%	.332
Extraction	34%	21.9%	
	12.6%	11.6%	
Do you think you need more knowledge on the causes and treatment of the Gingival Recession?			
Yes	65.8%	70%	.876
No	21.5%	12.1%	
Not sure	14.8%	17.9%	

Table 4 Comparison across working experience

Variables	Less than 10 years	More than 10 years	p-value
What is your perceived level of knowledge regarding the Gingival Recession?			
High	12.5%	45.5%	.008
Moderate	56.1%	17.2%	
Low	31.4%	37.2%	
The most common cause for the Gingival Recession?			
Periodontal disease	34.1%	44.8%	
Abnormal tooth position	15.1%	15.6%	.034
Improper tooth brushing	44.5%	32.7%	
High Frenal attachment	6.2%	8.9%	
Do you know Miller's classification of Gingival Recession?			
Yes			
No	41.9%	36.3%	.064
Don't remember	30.9%	33.3%	
I know another classification	23.1%	20.8%	
	4.1%	9.6%	
Indication for Root Coverage procedure?			
Aesthetics	37.6%	25.6%	
Hypersensitivity	29.9%	31.7%	
Prevention of vitality of the tooth	18.9%	20.8%	.382
Occlusal stability	13.5%	21.9%	
Risk factor for Gingival Recession?			
Traumatic occlusion	41.9%	34.7%	
Tooth position	31.9%	26.9%	.256
Tooth vitality	16.2%	18.3%	
Enamel hypoplasia	9.9%	20%	
Is Gingival Recession a consequence of lip, oral, and tongue piercing?			
Yes	45.4%	33.6%	.922
No	28.9%	26.8%	
Notsure	27.7%	39.6%	
What is the preferred treatment for the Gingival Recession?			
Gingival surgery			
Proclaim facets	35.9%	46.7%	
Photopolymer restoration	21.4%	21.8%	.132
Extraction	30%	20.9%	
	12.6%	12.6%	
Do you think you need more knowledge on the causes and treatment of the Gingival Recession?			
Yes	60.8%	60%	.176
No	26.5%	22.1%	
Not sure	14.8%	17.9%	

The majority of both groups were aware of Miller's classification, while more of the public sector know some other classifications. Aesthetics is a leading indication for coverage in the private sector while hypersensitivity for those working in the public sector. Risks associated with gingival recession for the private sector were traumatic occlusion and the same for the public sector. Both groups thought of recession as a consequence of lip, oral, or tongue piercing. Treatment of problems for private ones was photopolymer restoration while surgery for public ones and think they need more knowledge about causes and treatment of gingival.

In the last analysis, we explored non-significant differences across working experience, and the findings reported that those with more extraordinary experience have high knowledge of the problem. In contrast, other have moderate knowledge about the problem. Highly experienced through periodontal as leading or common cause compared to another group that thought improper brushing. Both groups were aware of Miller's classification, while those with more extraordinary experience were also aware of other classifications.

Aesthetics was the leading indication for the first group during hypersensitivity for the latter group. Traumatic occlusion was the leading risk factor for both groups' recession, followed by tooth position, vitality, and enamel hypoplasia, respectively. The majority of those with more fabulous experiences did not think of gingival as a result of some piercing, while those with lesser experience agreed with this. The treatment option for both was surgery, and they needed more information about causes and treatment.

DISCUSSION

In the present study, we investigated the knowledge and practice among dentists in Saudi Arabia about treating the gingival recession among dentists. Data was collected through an online survey using the cross-sectional survey design through simple random sampling. In the first analysis of the stats of the research, the findings reported that a significant proportion of the sample was male (56.8%), working in the government sector and having experience of fewer than 10 years.

Hypersensitivity was the highest indication for root procedure, and traumatic occlusion was the leading risk factor for gingival recession, followed by tooth position. A similar study also reported that, according to most participants, improper tooth brushing is one of the leading causes of gingival recession. In general, aesthetics was the most common reason for root coverage procedures, tooth vitality, and enamel hypoplasia. 39.3% of the population think gingival recession results from lip, tongue, or oral piercing, while 31.5% of them were not sure about the fact. 36.3% preferred surgery as the preferred treatment followed by photopolymer restoration and extraction, respectively (Mehta, 2015).

In the subsequent comparison analysis, we explored the non-significant differences across gender. The findings reported that the majority of both males and females were working in the government sector and had less than 10 years of experience. The majority of the male population was aware of Miller's classification compared to females, while females were also aware of some other classifications than male. Hypersensitivity was an indication of root coverage for females while aesthetics for males. Both groups held the same view about risk factors and thought traumatic occlusion was the biggest one, and studies also reported that traumatic occlusion could contribute to gingival recession(Patel et al., 2011).Furthermore, the participants revealed that the gingival recession was a sufficiently understood condition. Equal numbers of females were not sure and thought gingival recession was a result of lip or tongue piercing while males agreed with it as the cause of gingival. The preferred treatment for males was photopolymer while surgery for females. Both groups need more information about the causes and the treatment of the problem (Patel et al., 2011).

In further analysis, we investigated the non-significant differences across the working sector. The findings reported that dentists working in the private sector have lesser experience than those working in public hospitals. Aesthetics is a leading indication for coverage in the private sector. At the same time, hypersensitivity for those working in the public sector and literature also reported that the most prevalent reason for treating gingival recession is aesthetic reasons. The avoidance of further advancement of periodontal disease was also cited by a higher percentage of periodontists as a reason for root covering.

Periodontal disease was cited as the cause of gingival recession by a more significant number of them. Risks associated with gingival for the private sector were traumatic occlusion and the same for the public sector. Both groups thought of recession as a consequence of lip, oral, or tongue piercing. Treatment of problems for private ones was photopolymer restoration while surgery for public ones think they need more knowledge about the causes and treatment of gingival recession (Grover et al., 2012).

In the last analysis, we explored non-significant differences across working experience, and the findings reported that those with more fantastic experience have high knowledge of the problem. Aesthetics was the leading indication for the less experienced ones and hypersensitivity for the highly experienced group. Traumatic occlusion was the leading risk factor associated with recession for both groups, followed by tooth position, vitality, and enamel hypoplasia, respectively. Previous studies also reported almost the same results. The majority of those with more experience did not think of gingival as a result of some piercing, while those with lesser experience agreed with this. Similar findings were noted by Bhat et al (2019).

CONCLUSION

Our study findings reported that our sample has moderate knowledge of the problem and the leading cause is improper brushing and periodontics diseases. About Miller's classification, a good proportion know. The leading risk factor was traumatic occlusion, and the indication for root coverage was aesthetics. The preferred treatment option was surgery. They need more information about causes and treatment.

CONFLICT OF INTEREST

There is no conflict of interest among the authors.

FUNDING: Nil

ETHICAL STATEMENT

This study complies with the ethical requirements.

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