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RESEARCH ARTICLE

PREVALENCE OF COMPLICATIONS AFTER ODONTOPLASTY

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Abstract

Background: Cosmetic dentistry, also known as enameloplasty, is what "odontoplasty" refers to. This cosmetic dentistry treatment that strives to enhance the function of human teeth also includes contouring and reshaping of the teeth. Enhancing the look of a person's teeth by modifying their size, length, or even shape is a popular cosmetic procedure nowadays. This research aimed to assess and understand the issues and complications that are reported to have been faced by many people who have gone through the procedure of odontoplasty.

Methods:A cross-sectional study was used to understand the prevalence of complications after odontoplasty. The philosophy of positivism is appropriate for this research as it helped in the descriptive assessment of the quantitative data gathered. An inductive research approach would be implemented because this approach relies on building up new theories and developing perceptions from existing theories. This is the need of this research work, and therefore an approach of inductive nature would be the best fit.The sampling method that was implemented is stratified random sampling, which would help consider those individuals in the UK going through the odontoplasty procedure. The sample age group is within the range of 25-40 years.

Results: Study included 562 participants in which all of them responded to study survey questions. The most frequent complication was weak tooth (n= 268, 47.7%). More than third of study participants didn't support the changing of natural appearance of the tooth (n= 216, 38.4%). However, 63% would like to further changing the existing shape and size of their teeth (n= 354). On the other hand, 241 participants believed that odontoplasty is a necessity (42.9%). The same percentage almost recommended others to undergo odontoplasty (n= 239, 42.5%). 312 participants felt moderate pain (55.5%) is more than half of study participants. The most frequent reason why participants underwent odontolplasty was bad shape of teeth (n= 259, 46.1%).

Conclusion: The most prevalent consequence was weak teeth. More over a third of survey participants opposed altering the tooth's natural

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look, according to the study findings. However, more than half of individuals would desire to modify their present tooth form and size. Some participants, however, thought that odontoplasty is necessary. Over fifty percent of subjects reported moderate discomfort. About half of them claimed that it would endure for extended period of time

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Introduction:-

Cosmetic dental work, also known as enameloplasty, what is meant by the term "odontoplasty." Teeth contouring and reshaping are also a part of this cosmetic dentistry process that aims to improve human teeth's functionality [1]. Enhancing the appearance of one's teeth by changing their size, length, or even form is a much sought after cosmetic surgery nowadays. There are, however, some drawbacks to this method that patients undergoing cosmetic dentistry procedures should be aware of, such as enamel loss and tooth damage [2]. In order to lessen the potential for difficulties during odontoplasty, it is necessary to take stock of the situation and fix the concerns that have been identified. This method is not only prohibitively expensive, but also unavailable to the vast majority of the population [3].

Odontoplasty refers to aesthetic dental procedures that focus on the tooth's form, size, and even length. Depending on the dentist, aesthetic dental procedures might be somewhat painless or even uncomfortable for individuals [4]. Dentists use several filling materials to perform this procedure, which results in the removal of very little tooth enamel. This is useful for making length or width modifications, as well as for reshaping the teeth. This procedure is also useful for creating symmetry in teeth whose lengths are unequal. In brief, this procedure enhances the teeth's aesthetics and makes them more aesthetically pleasing [5].

Odontoplasty may not always be as painless as patients want, and it may have unintended consequences for their teeth. The teeth's protective enamel is lost during this procedure, which has negative effects on the teeth's health and appearance [6].

Enamel is the hard, outer covering of the tooth that prevents decay and strengthens the tooth itself. As a result, the teeth become weak and more prone to breakage once this layer is removed. The sensitivity of the tooth also rises, which makes it more vulnerable to decay. Because of this, there is a higher incidence of tooth damage, such as chips and cracks [7]. Loss of enamel also causes a gradual discoloration of the teeth over time, making them seem more yellow. Despite the risks, however, this kind of dental cosmetic surgery has become more popular because to the perceived advantages, both short-term and long-term, in terms of one's physical appearance [1].

This research aimed to assess and understand the issues and complications that are reported to have been faced by many people who have gone through the procedure of odontoplasty.

Methods:-

Research Philosophy

A cross-sectional study was used to understand the prevalence of complications after odontoplasty. The philosophy of positivism is appropriate for this research as it helped in the descriptive assessment of the quantitative data gathered.

Research Approach

An inductive research approach would be implemented because this approach relies on building up new theories and developing perceptions from existing theories. This is the need of this research work, and therefore an approach of inductive nature would be the best fit.

Research Design

A descriptive design is appropriate for executing this research work. This is because the occurrence of complications that arise after dental cosmetic surgery was assessed here in this research work. Therefore, the chosen research design assisted in examining the data and information gathered in detail, and cross-sectional studies require examining the retrieved data in detail [8].

Research Method:-

This research work followed the path of a cross-sectional study, which means retrieving first-hand data, and therefore, the primary method would be the best fit. This method includes retrieving data that are quantitative [8]. This assisted in better assessing the complications after undergoing the process of odontoplasty.

Sample

The sampling method that was implemented is stratified random sampling, which would help consider those individuals in the UK going through the odontoplasty procedure. The sample age group is within the range of 25-40 years.

Data Collection

In order to retrieve data for getting better insight into the complications of odontoplasty, considering retrieval of data through a survey was ideal [8]. This will include the multiple-choice questionnaires, which helped to get more knowledge about the complications and assist in addressing solutions.

Data Analysis

In this research work, the analysis of data used is quantitative analysis. This is because the research followed a structure of the cross-sectional study through the conduction of a survey [8]. Therefore, quantitative investigation of the retrieved data is appropriate and help in getting the required outcome.

Validity and Reliability

The process through which the data was gathered stick to the path of authenticity, and no data was changed for serving any interest on the personal level [8]. The sources from where the data were retrieved are also genuine.

Ethical Considerations

To maintain the ethical scenario, the sources' privacy were maintained, and the participants were sent a consent form before executing the survey.

Results:-

Study included 562participants in which all of them responded to study survey questions. Participants' responses are provided in table 1. It is noticed from the table that more than third of study participants didn't support the changing of natural appearance of the tooth (n= 216, 38.4%). However, 63% would like to further changing the existing shape and size of their teeth (n= 354). On the other hand, 241 participants believed that odontoplasty is a necessity (42.9%). The same percentage almost recommended others to undergo odontoplasty (n= 239, 42.5%). More than half of study participants had no ideas about other solutions to improve teeth appearance. Responses to the rest of questions are presented in table 1.

Table 1:- Participants' responses to survey items.

Item	Yes	No	Neutral
1) Do you support changing the natural appearance of the tooth undergoing odontoplasty?	195 34.7%	216 38.4%	151 26.9%
2**)** Do you feel like further changing the existing shape and size of your teeth?	132 23.5%	354 63%	76 13.5%
4) Did you experience any pain during the process of odontoplasty?	241 42.9%	156 27.8%	165 29.3%
9) Do you consider the process of odontoplasty is a necessity?	241 42.9%	132 23.5%	189 33.6%
10) Do you feel any recovery or improvement after odontoplasty surgery?	336 59.8%	70 12.5%	156 27.7%
11) Do you think that odontoplasty will affect the strength of the teeth?	249 44.3%	216 38.4%	97 17.3%
12) Would you recommend another person undergo the process of odontoplasty?	239 42.5%	138 24.6%	185 32.9%
13) Do you feel that odontoplasty is the only solution for enhancing the appearance of your teeth?	247 44%	203 36.1%	112 19.9%

14) Do you know about any other solution to improve the appearance of teeth?	151 26.9%	295 52.5%	116 20.6%

After undergoing odontoplasty, participants faced some issues. The most frequent one was weak tooth (n= 268, 47.7%). Other issues are presented in figure 1.

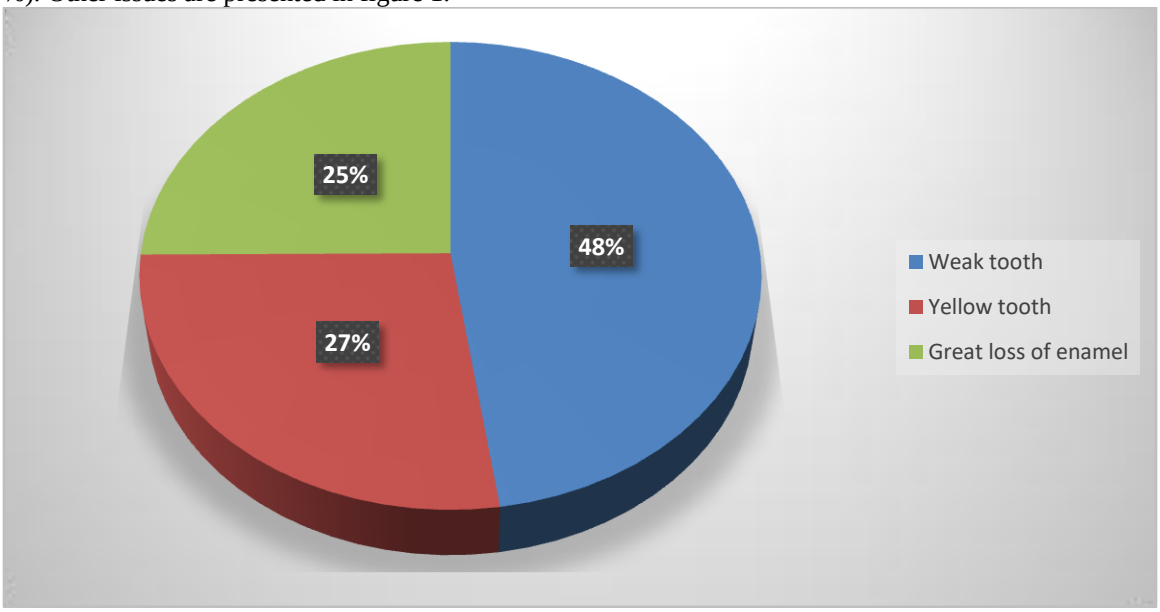

Figure 1:- Medicines responsible for menstrual irregularity.

Participants were asked about the painful degree while undergoing odontoplasty, 312 participants felt moderate pain (55.5%) is more than half of study participants. Other responses are provided in figure 2.

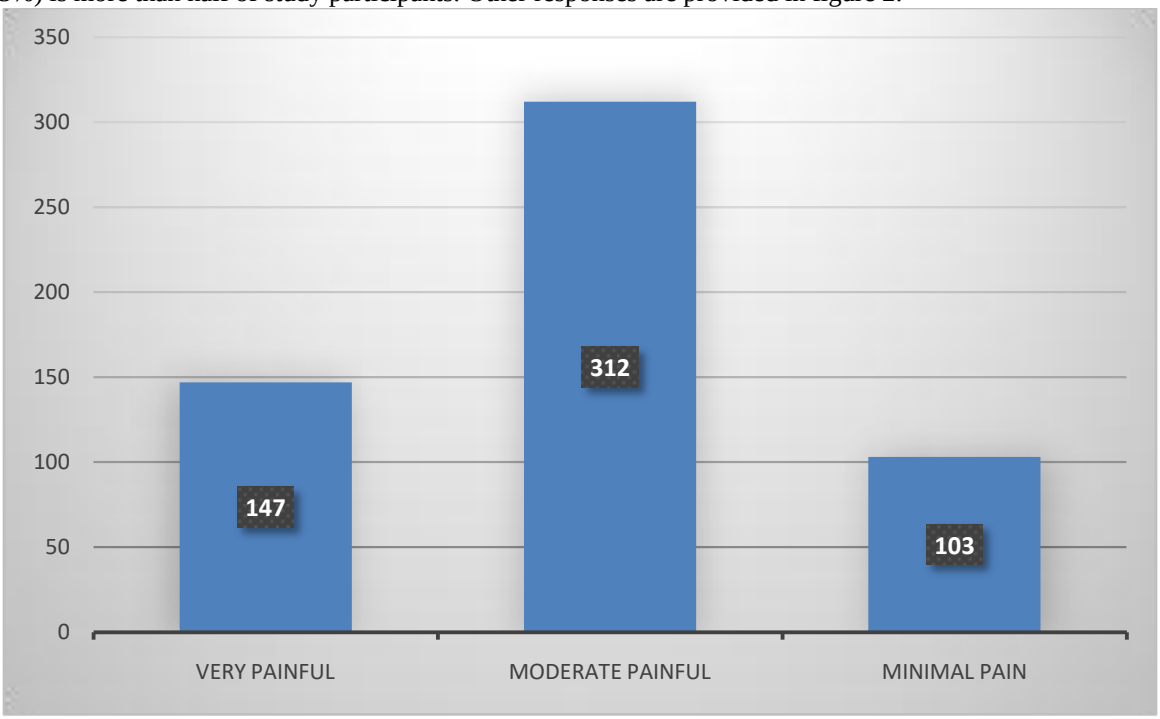

Figure 2:- degree of pain during odontoplasty.

The most frequent reason why participants underwent odontolplasty was bad shape of teeth (n= 259, 46.1%). Other reasons are demonstrated in figure 3.

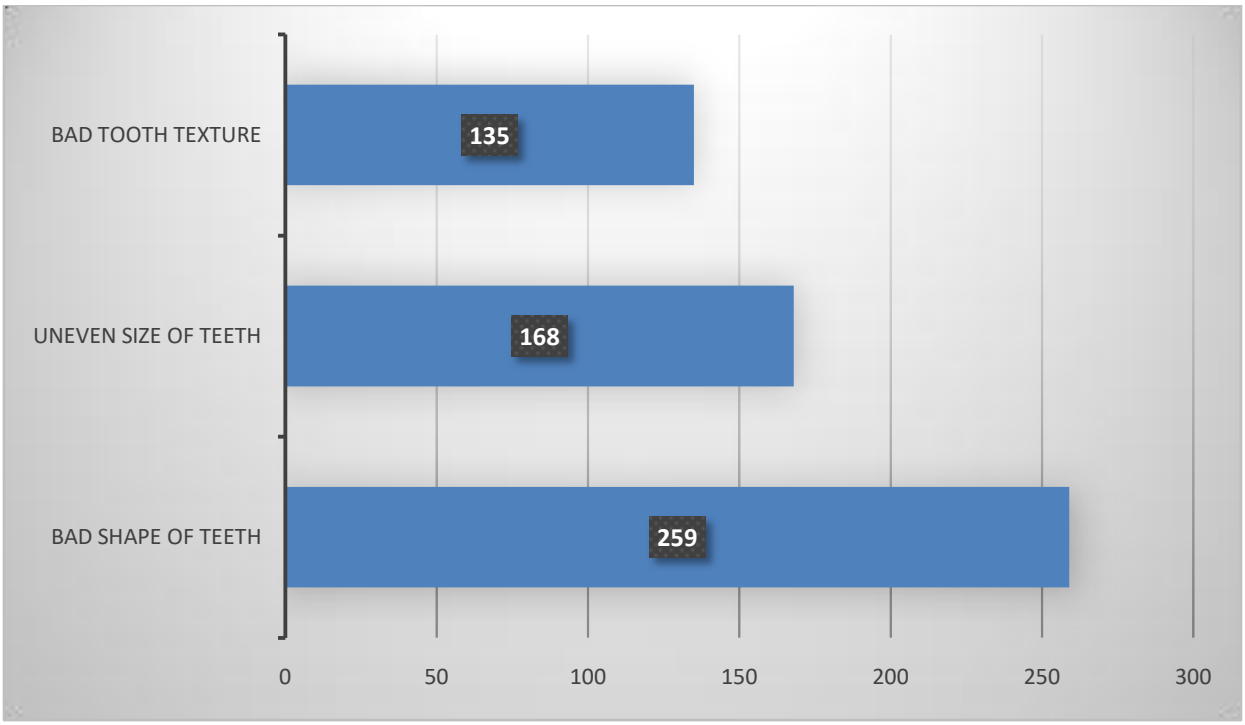

Figure 3:- Plans to fight menstrual irregularity.

The cost of odontoplasty was very costly as reported by 379 of study participants (67.4%). On the other hand, 49 participants reported that the cost was affordable (8.7%). While 134 participants believed that the cost is moderate (23.8%).

Upon asking study participants about the period that odontoplasy might last, about half of them reported that it would last for long span of time (n= 277, 49.3%). Other participants responses are presented in figure 4.

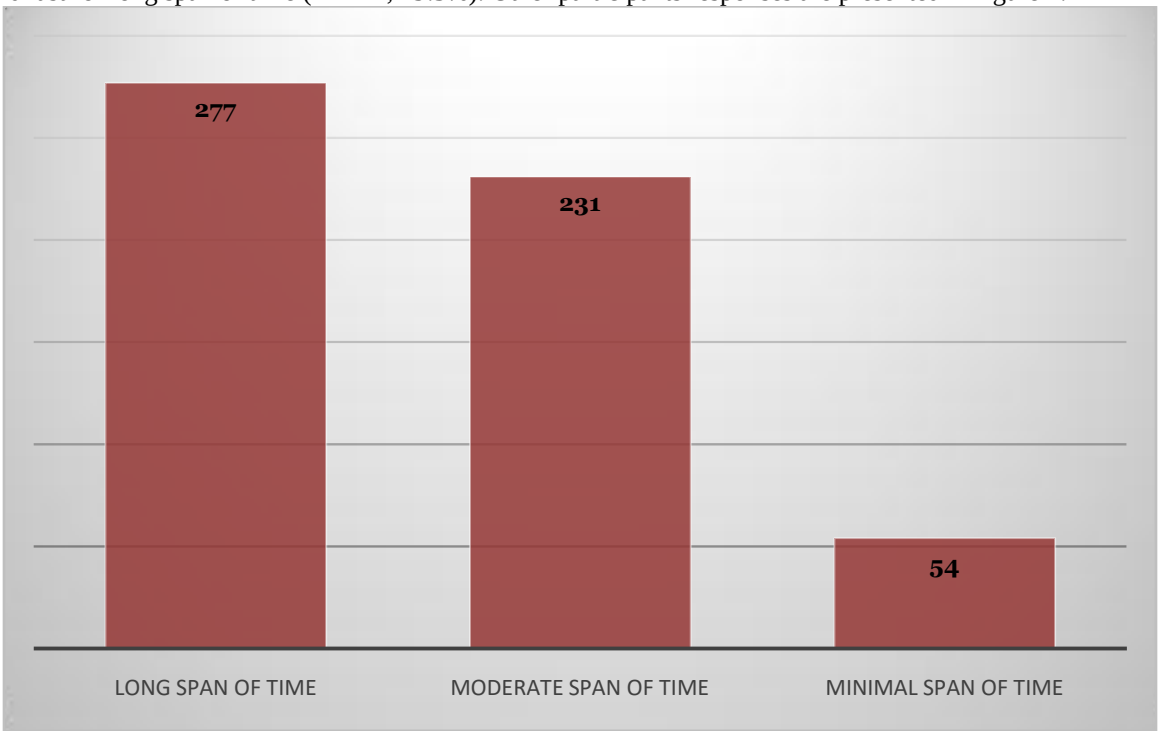

Figure 4:- Duration that odontoplasty last.

Discussion:-

Caries prevention is a crucial area of focus in preventive dentistry [9]. Repeated cavities, pulp inflammation, and pulp necrosis may all be attributed in part to micro-leakage. Micro-most leakage's serious side effect is the unchecked outflow of liquids, which may cause pulp inflammation and peri-apical disease [9-10]. Newly erupted permanent molars in youngsters, particularly those with pits and fissures, are more susceptible to caries. Whenever cracks need to be sealed, people often turn to fissure sealants. A sealant's ability to reduce caries relies on how well it bonds to enamel and how well the enamel is able to protect itself from the sealant [9].

While enamel is being etched, the sealant is able to enter the tiny crannies that form there. As it travels down into the etched enamel, it leaves behind resin tags that may be bonded mechanically [11]. Thus, proper placement of the fissure sealant is crucial to its long-term therapeutic efficacy [12].

The adhesion of the sealant to the fissure may be improved and micro-leakage reduced by prepping the fissure with one of many ways, such as pumice powder prophylaxis, preparation with a round bur 1/4, or air abrasion. Air abrasion is very effective for clearing out the fissure's depth, hence it's advised to apply it before a fissure sealer is applied [9].

Depending on the study, air abrasion may either increase or decrease the binding and micro-leakage of fissure sealants. Brockman et al. found no difference in sealant efficiency between pumice and air abrasion preparation [13], but Brocklehurst et al. demonstrated greater depth of penetration with the air abrasion procedure [14]. Research by Zyskind et al. [15] demonstrated the value of acid etching in preventing micro-leakage, but failed to find a statistically significant difference between air abrasion followed by etching and air abrasion followed by etch and scotch bond. Using air abrasion and acid etching prior to applying fissure sealants has been shown to be the most effective preparation procedure by Hatibovil et al. [16].

It has been proven in few research [17-20] that air abrasion is an efficient technique. Knoblock could not identify any statistically significant differences between air abrasion and acid etching when using air abrasion alone [21]. Pumice and etch, as shown by Srinivasan et al. [22], is the superior technique of preparation. It was shown by Ansari [23] that micro-leakage may be greatly reduced by using pumice powder.Gray demonstrated that etching rather than being loosened by air abrasion [24] strengthen the enamel-to-tooth connection. Yazici et al. [25] state that after 12-24 months, air abrasion combined with acid etching is superior than air abrasion alone.

Conclusion:-

The most frequent complication was weak tooth. Study results showed that more than third of study participants didn’t support the changing of natural appearance of the tooth. However, more than half of participants would like to further changing the existing shape and size of their teeth. On the other hand, some participants believed that odontoplasty is a necessity. More than half of participants felt moderate pain. About half of them reported that it would last for long span of time.

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