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Awareness Of Flat Face Microstomia Among Dental Students

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Abstract

Introduction: Microstomia is a term used to depict small oral opening.People with microstomia may encounter a few issues related to speech due to restricted tongue movement, malnutrition due to difficulty in food intake, decreased dental hygiene ,abnormal facial expression . Furthermore , airway and ventilation issues and aspiration can result in fatal results during general anaesthesia protocols.The aim of the study is to create awareness about flat face microstomia among dental students.

Materials and methods: An online study questionnaire of 15 questions was circulated among 112 dental students of saveetha dental college .The data was compiled in Excel and the results were statistically analysed using spss software.

Results: From the data analysed ,The results showed that around 35.71% of females and 28.57% of male respondents were unaware of the cause and treatment of flat face microstomia.

Conclusion: Thus from the study it is clear that most dental students are not aware of flat face microstomia and about the treatment modalities available since it is rare in occurrence.
Keywords: Awareness,students, flat face microstomia

INTRODUCTION

Microstomia is a term used to depict small oral opening (1). The orbicularis oris muscle, the primary muscle of the lips, forms the sphincter around the mouth and the philtral columns (2) The muscular layer is separated from the skin by a thin subcutaneous layer and from the mucosa below by a thin submucosal layer that contains the adnexa, sensory end organs, and lymph nodes.Injury, ingestion of acidic substances, electrical and thermal burns of perioral tissues and reconstructive lip medical procedures can result in undesired scar arrangement in these muscles and restrain mouth opening (3).Microstomia can happen because of acquired

and hereditary (mostly in rare cases).

People with microstomia may encounter a few issues related to speech due to restricted tongue movement, malnutrition due to difficulty in food intake, decreased dental hygiene ,abnormal facial expression (4). Furthermore , airway and ventilation issues and aspiration can result in fatal results during general anaesthesia protocols. The most common inherited disorders associated with flat face microstomia is scleroderma which a multi-system disorder of the connective tissue characterized by vascular disease and the deposition of collagen and other matrix constituents in the skin and other target organs, i.e., the gut, lung, heart, kidney, joints and muscles.

En luo et al in his study described the importance of knowledge on flat face microstomia ,their craniofacial manifestations and also the treatment modalities available in the market .Shalini R Gupta in her study explained the manifestation of flat face microstomia when it has a hereditary origin and the difficulties felt by the patients.(5)

There are several treatments prescribed for flat face microstomia which aim in the reconstruction of the orbicularis sphincter for adequate lip functioning, obtaining lip symmetry and formation of well positioned and undistorted scars(6).The severity of the condition also determines the outcome of the treatment .The lesser the severity the better the facial aesthetics after treatment.Treatment protocols includes surgical treatment to restore proper facial framework which is most effective followed by scar massage ,splinting which is least effective. Our team has extensive knowledge and research experience that has translate into high quality publications(7–15),(16–21),(22–28)

The aim of the study is to assess the awareness of flat face microstomia among dental students.

MATERIALS AND METHOD:

A cross sectional study involving students of Saveetha dental college ,Chennai ,India were taken.Ethical approval was obtained from the international review board prior to the start of the study..A questionnaire was set up and circulated among dental students of 112 people. The sampling method used in this study was non-probability convenient random survey sampling. To minimize the bias certain measures were taken that include, to avoid leading questions, use of simple language to frame the questions and avoidance of difficult concepts among common people. A self-structured questionnaire containing 15 questions was framed which was checked for validity by three internal experts (from Saveetha Dental College) and also by three external experts (outside Saveetha Dental College). The questions enquired about the awareness of flat face microstomia among dental students. Google forms were used to circulate the questions and the responses were collected, the data analysis was carried out using SPSS software. Chi square test was used for statistical analysis and p value < than 0.05 was considered as significant.

RESULTS :

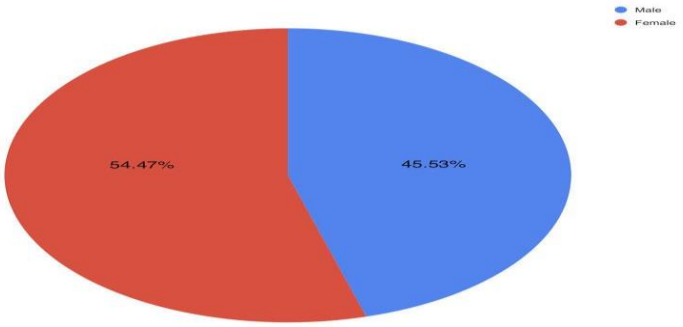

Figure 1 represents the pie chart of the participants who were involved in this study. Blue colour denotes males and red colour denotes females. 45.53% were males and 54.47% were females.

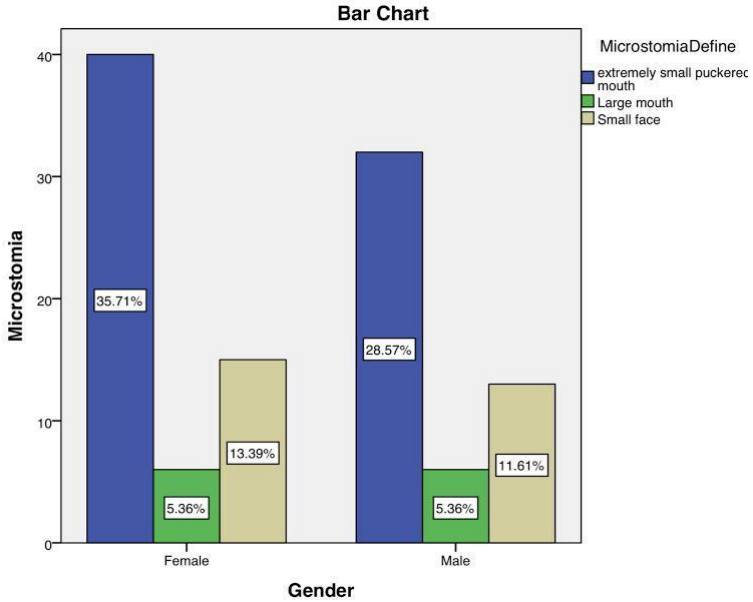

Figure 2 depicts the correlation graph between gender of the participants and their awareness on what microstomia is. Blue colour denotes extremely small puckered mouth, green colour denotes large mouth ,yellow colour denotes small face. Among females, 35.71% answered as small puckered mouth, 5.36% answered as large mouth and 13.39% of females responded as small face. Whereas among the males, 28.57% responded as small puckered mouth, 5.36% of males answered large mouth and 11.61% answered as small face. Chi square test was evaluated for this graph with a p value of p=0.142 (p>0.05). Hence the value is statistically insignificant.

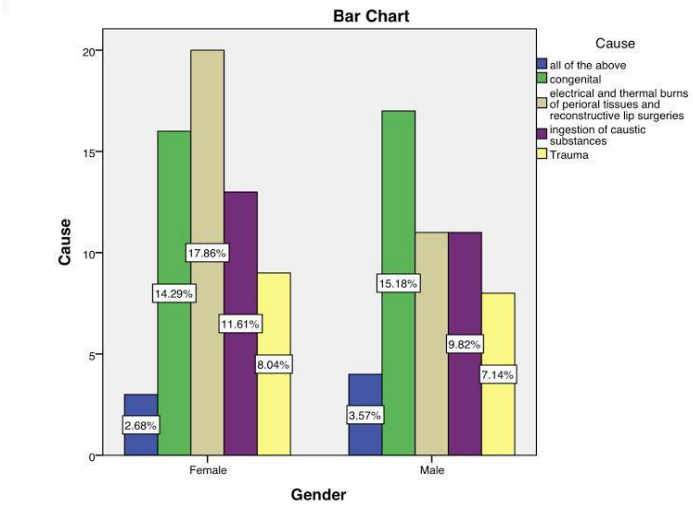

Figure 3 depicts the correlation graph between gender of people participated and the cause for flat face microstomia syndrome. Green colour denotes congenital , brown colour denotes electrical thermal burns of perioral tissues and reconstructive lip surgeries ,purple colour denotes ingestion of caustic substances ,yellow colour denotes trauma and Blue colour denotes

all of the above. Among females, 14.29% answered congenital ,17.86% answered as electrical thermal burns of perioral tissues and reconstructive lip surgeries , 11.61% of females responded as ingestion of caustic substances and 8.04% of females answered as trauma and 2.68% of females responded as all of the above . Whereas among males, 15.18% answered as congenital, 9.82% of males answered electrical thermal burns of perioral tissues and reconstructive lip surgeries and 9.82% of males responded as ingestion of caustic substances , 7.14 % of males had responded as trauma and 3.57% of males answered as all of the above . Chi square test was evaluated for this graph and obtained p value of p=0.032 (p>0.05). Hence the value is statistically significant.

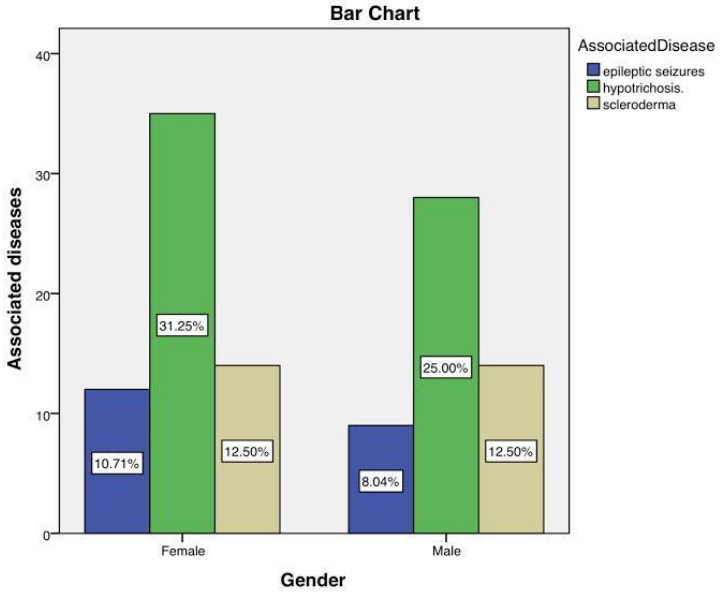

Figure 4 represents the association graph between gender of people participated and associated disease with flat face microstomia syndrome. Blue colour denotes epileptic seizure ,yellow colour denotes scleroderma and green colour denotes hypotrichosis. Among females, 10.71% answered epileptic seizure, 31.25% answered as hypotrichosis and 12.50% of females responded as scleroderma. Whereas among males, 8.04% answered as epileptic seizure , 25.00% of males answered hypotrichosis and 12.50% of males responded as scleroderma. Chi square test was evaluated for this graph and obtained p value of p=0.316 (p>0.05). Hence the value is statistically insignificant.

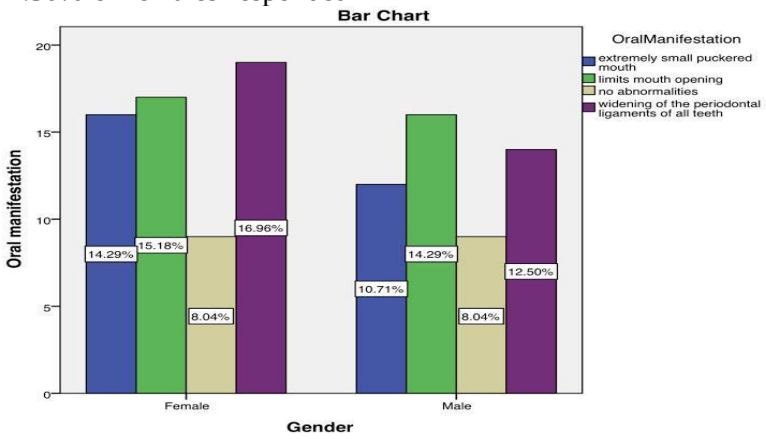

Figure 5 depicts the correlation graph between gender of people participated and the oral manifestations of flat face microstomia syndrome. Blue colour denotes extremely small puckered mouth,green colour denotes limitation in mouth opening, yellow colour denotes no abnormalities and purple colour denotes widening of periodontal ligaments of all teeth . Among females, 14.29% answered extremely small puckered mouth,15.18% answered as limitation in mouth opening , 16.96% of females responded as widening of periodontal ligaments of all teeth and 8.04% of females answered as no abnormalities . Whereas among males, 10.71% answered as extremely small puckered mouth, 14.29% of males answered limitation in mouth opening and 12.50% of males responded as widening of periodontal ligaments of all teeth and 8.04 % of males had no abnormalities . Chi square test was evaluated for this graph and obtained p value of p=0.047 (p>0.05). Hence the value is statistically significant.

Figure 6:

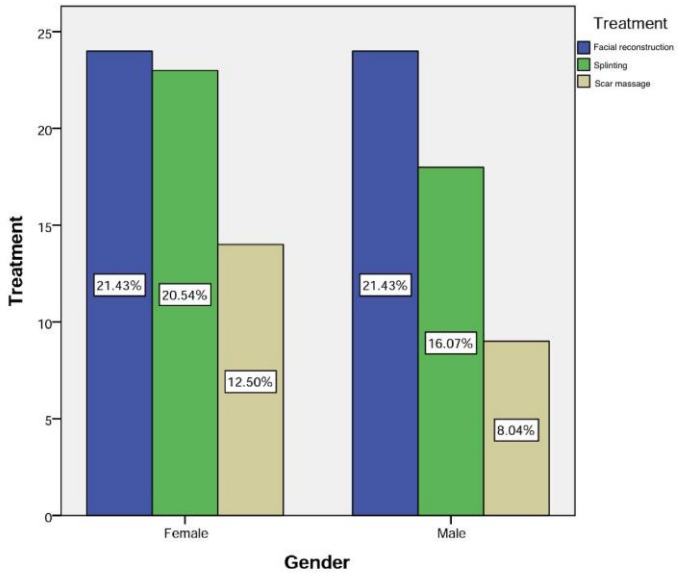

Figure 6 depicts the correlation graph between gender of people participated and the treatment available for flat face microstomia syndrome. Blue colour denotes facial reconstruction ,green colour denotes splinting,yellow colour denotes scar massage . Among females, 21.43% answered facial reconstruction,20.54% answered as splinting, 12.50%of females responded as scar massage .Whereas among males,21.43 % answered as facial reconstruction.16.07% of males answered splinting and 8.04% of males responded as scar massage.. Chi square test was evaluated for this graph and obtained p value of p=0.047 (p>0.05). Hence the value is statistically significant.

There was a dominance of the female population than males in this study (figure 1). A positive correlation was found among the study population having a better knowledge on microstomia (figure2) . A negative correlation was obtained on the knowledge of the cause of microstomia among the students (figure 3). Inverse relationship was observed among the study population having a least understanding on the associated disease of microstomia (figure 4). The oral manifestation for flat face microstomia was least known among the dental students population with low awareness (figure 5). There was a negative association among the students having the least awareness on treatment of flat face microstomia syndrome (figure 6).

DISCUSSION:

A total of 112 dental students who participated in the survey, 51 were males and 61 were females (figure 1). From the results, we observe that most

of the people were unaware of the syndrome flat face microstomia. Though some people guessed the syndrome by the term microstomia as small puckered mouth (35.71%), most of them were unaware of its causes, manifestations and the treatment provided to them to prevent its occurrence (figure2). The flat face microstomia often makes the patient compromise the cosmesis, nutrition, and also result in inferior complexity among themselves.(29).

According to (figure 3) flat face microstomia can be caused by various causes wherein the students were confused with the causes and most of them answered as one particular cause for resulting in flat face microstomia. This graph thus shows the unawareness of the students towards this disease. The flat face microstomia is more often caused due to perioral facial burns. The most common of these burns results from electrical burns sustained when a child chews on an electrical cord or extension cord plug. Deep burns of the face caused by ingesting lye or any caustic substances may also cause this deformity. Trauma was also found to be a major risk factor in obtaining flat face microstomia. Certain congenital occurrences of this disease were also observed at early times. The disease can thus occur as both acquired and congenital.(30)

The common disease associated with the flat face syndrome was queried among the dental students. (Figure 4) Many students were misled with the term hypotrichosis which is nowhere related to flat face microstomia syndrome (31.25%). Hypotrichosis refers to a rare disorder where there is little or no hair growth on the head, including the brows above the eyes and the edge of the eyelids. Some were also misled with epileptic seizures (10.71%). People affected with flat face microstomia have only effects on facial, nose and mouth deformity which is neither correlated with epileptic seizures. The epileptic seizure is a neurological disorder in which brain activity becomes abnormal, causing seizures or periods of unusual behavior, sensations, and sometimes loss of awareness. The seizure lasts for 10-15 minutes and suppresses itself. In adverse cases the seizures extend for a prolonged period addressing as a medical emergency condition. Only a least percentage have identified the associated syndrome as scleroderma (12.50%). The scleroderma is a long-lasting disease that affects the skin, connective tissue, and internal organs of the patients. It happens when the immune system causes the body to secrete increased protein collagen. As a result, the skin gets thick and tight, and scars can form on lungs and kidneys. Microstomia is found as one of the symptoms of scleroderma, is the name given to the tightening and hardening of the skin around the mouth. This tightening can ultimately cause difficulties in speaking, eating, and brushing and flossing the teeth, and with dental procedures.

The oral manifestation of the flat face microstomia syndrome was discussed among the dental students. (Figure 5). Most of the students were unaware of the features in which a high percentage of 16.96% of the students answered as widening of periodontal ligaments of all teeth. The widening can occur only when the periodontal tissues become weaker or any damage to the supporting bone structure.(31) Whereas in flat face microstomia patients experiences extremely small puckered mouth , limitations in mouth, extensive forehead, short nose, drooping of the eyelids, deep folds in the area between the nose and the lips, problems with speech, oral intake, dental hygiene, facial expression. The microstomia has the biggest adverse effect on the oral cavity. The difficulty in mouth opening results in the greatest drawback on oral hygiene maintenance, which in turn leads to dental caries. The smallmouth results in their dental malocclusion which can also promote caries formation on the teeth.(32)

Most of the dental students answered facial reconstruction 21.43% (female),21.43%(males) through their experience in dentistry though they are not sure this is the right treatment.This shows that the dental students have a good analysing skill in terms of flat face microstomia though they are not sure what the condition really means(figure6)

CONCLUSION:

Individuals with microstomia would benefit from early medical treatment .Dental procedures like restorative treatments are complicated in these

patients .Thus from the study it is clear that most dental students are not aware of flat face microstomia .Long-term documentation of such cases and multicentre audit will enhance our understanding and improve our future management of flat face microstomia and it associated conditions.

Conflict of interest: None declared

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