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**“ASSESSMENT OF VARIOUS PSYCHOLOGICAL  
FACTORS OF CLEFT LIP AND/OR PALATE  
PATIENTS MEASURED DURING  
ORTHODONTIC TREATMENT: A HOSPITAL  
BASED QUESTIONNAIRE STUDY”**

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**By**

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*Dissertation*

*Submitted to*

*KAHER, Belagavi, Karnataka*

*In partial fulfillment of the requirements for the degree of*

**MASTERS OF DENTAL SURGERY  
IN  
ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS  
(BRANCH – V)**

**Under the Guidance of**

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**Poojit Ashok Rasalkar**

## LIST OF ABBREVIATIONS

CL	-	Cleft Lip
CP	-	Cleft Palate
CLP	-	Cleft Lip and Palate
CLCP	-	Cleft Lip and Cleft Palate
CL and/or P	-	Cleft Lip and/or Palate
UCL	-	Unilateral Cleft Lip
UCLP	-	Unilateral Cleft Lip and Palate
BCL	-	Bilateral Cleft Lip
BCLP	-	Bilateral Cleft Lip and Palate
CUCLP	-	Complete Unilateral Cleft Lip and Palate
SMCP	-	Submucous Cleft Palate
NAM	-	Nasoalveolar Moulding
NSCLP	-	Non-Syndromic Cleft Lip with Palate
CEP	-	Cleft Evaluation Profile
MDD	-	Major Depressive Disorder
SAD	-	Social Anxiety Disorder
SEI	-	Self Esteem Index
SWLS	-	Satisfaction with Life Scale

AC	-	Aesthetic Component
IOTN	-	Index of Orthodontic Treatment Need
IOTN-AC	-	Index of Orthodontic Treatment Need- Aesthetic Component
PIDAQ	-	Psychosocial Impact of Dental Aesthetics Questionnaire
SDQ	-	Questionnaire of Strengths and Difficulties
STAI	-	State-Trait Anxiety Inventory
CESD	-	Center for Epidemiological Studies Depression Scale
RSE	-	Rosenberg Self Esteem Scale
VAS	-	Visual Analogue Scale
SPSS	-	Statistical Package for the Social Sciences
ANOVA	-	Analysis of variance

## **ABSTRACT**

### **Introduction:**

Patients with a cleft are often dissatisfied with their physical appearance, especially their faces. This affects their psychosocial development and self – perception. Besides, such patients suffer from speech, hearing, masticatory difficulties and others. Correction of cleft encompasses not only the correction of malocclusion and other cleft deformities but also the psychological and physical attributes associated with it. Dental surgeons and orthodontists are deeply involved in creating the entire dentofacial complex and the patient as a whole, not just the dentition. Since multi-specialty care currently focuses primarily on physical well-being while neglecting the psychological issues of care. This current study was carried out to shed some light on the social difficulties, like anxiety, depression, self-esteem, a cleft patient is going through.

### **OBJECTIVES:**

To evaluate if patients with cleft lip and/or palate are at increased risk of impaired psychosocial functioning.

- To evaluate anxiety of cleft lip and/or palate patients.
- To evaluate depression of cleft lip and/or palate patients.
- To evaluate self-esteem of cleft lip and/or palate patients.
- To evaluate happiness with respect to the appearance of cleft lip and/or palate patients.

## **Materials and method:**

This was a descriptive cross-sectional questionnaire study conducted on 90 cleft patients undergoing orthodontic treatment, who reported to the Department of Orthodontics and Dentofacial Orthopaedics at KLE Academy Of Higher Education and Research, (KAHER) KLE V. K. Institute of Dental Sciences, Belagavi. In the age group, both males and females of 14-29 were studied. The questionnaires used were: the Short form of Spielberger State-Trait Anxiety Inventory (STAI), the Short Four-Item Center for Epidemiological Studies Depression Scale(CESD), Rosenberg self-esteem scale, a visual analogue scale for happiness with respect to facial appearance and a custom made question set. The responses provided by the patients to the questionnaires (Annexure IV) were scored as mentioned in the annexure V, VI, VII, VIII, IX. These scores were entered and scrutinized using SPSS (Statistical Package For Social Sciences Cooperation, Chicago USA) version 21. Further, a descriptive and inferential analysis was done to conclude.

## **Results:**

The study concluded that the cleft participants had minor anxiety(43.84), minor risk of depression(4.53), average self-esteem(22.33), they were not happy with their facial appearance(6.43). The custom questionnaire concluded that speech was the major problem(64.4%), they share their feelings with respect to cleft with parents more than friends(65.6%), they needed more attention to be given by the clinician(72.2%), they were satisfied with the orthodontic treatment(83.3%) and the first thing they notice about their face was teeth alignment(67.8%).

**Conclusion:**

Although through radiographic, clinical investigations and analysis, the orthodontist determines the treatment plan, the patient might emphasize different treatment needs and go through various emotional turmoil, which, as clinicians, should be aware of while treating a patient with a cleft. Thus, the patients' perceptions and psychological needs must be given priority during orthodontic treatment. Emphasis on overall well-being may provide further positive psychological benefits, which may lead to higher anticipation of satisfaction at treatment completion and shaping their minds positively.

**Keywords:** Cleft lip, cleft palate, psychology, anxiety, depression, self-esteem.

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## INTRODUCTION

Cleft lip and palate is a developmental craniofacial anomaly that is formed during fetal development due to failure of fusion of developmental processes of the face and presents the asymmetries of the naso-maxillary complex's soft and hard tissues. The frequency of lip and palate clefts is highly prevalent in American Indians (3.74 per 1,000), followed by Japanese (2.68 per 1,000) and the Chinese (1.92 per 1,000). The whites have a higher value than the blacks who have the lowest incidence (0.18 to 1.67 per 1,000)<sup>1</sup>. Cleft frequency in India is 1 out of 500 live births<sup>2</sup>. Thirty percent of these births account for complete unilateral cleft lip and palate (CUCLP). Cleft lip and palate can be syndromic or non-syndromic. The non-syndromic cleft lip and palate emerges as a complex multifactorial characteristic with a major genetic dimension and environmental factors. The global prevalence of the cleft lip with/without the cleft palate was 9.92 for every 10,000. In India, the cleft lip prevalence was 3.28 per 10,000, and the cleft lip and palate prevalence were 6.64 per 10,000. The prevalence of clefts at birth is between 27,000 and 33,000 clefts per year<sup>1</sup>. Cleft lip and/or palate may be categorized into three main categories:

- 1) Cleft lip/alveolus (CL), unilateral (UCL) or bilateral (BCL)
- 2) Cleft lip and palate (CLP), unilateral (UCLP) or bilateral (BCLP)
- 3) Cleft palate only (CP) or submucous cleft palate (SMCP)

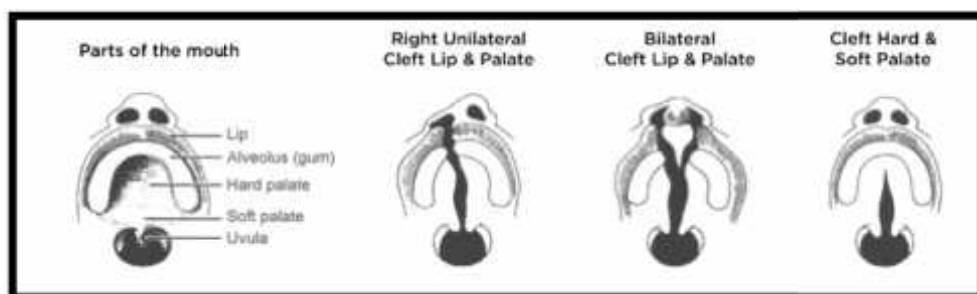


Figure 1: Classification of Cleft Lip and/or Cleft Palate

Individuals with cleft lip and palate have facial deformities, eating issues and recurrent middle ear infections involving multidisciplinary care strategies. Intervention starts from surgical repair of the congenital disability to attain proper and early velopharyngeal function followed by orthodontic management to correct skeletal and dental defects which occur due to morbidity or iatrogenic consequences of the surgical act.

The treatment protocol for cleft lip and palate subjects starts as soon as the defect is found, starting with procedures such as nasoalveolarmolding (NAM) to orthognathic surgeries followed by rhinoplasty and lip repair in the later stages. From birth to around six weeks – feeding assistance and support for the parents are provided by the pediatrician. An ENT surgeon also conducts an examination of the hearing at around the same time. From 3 to 6 months – a surgery is done to repair the cleft lip by a plastic surgeon. Around 6 to 12 months - surgery is done to repair a cleft palate. Through 18 months up until 5 years of age – speech assessment is done by a speech-language pathologist (SLP). When an individual is around 8 to 12 years of age – a bone graft is done to repair the cleft. And when they are around 12 to 15 years of age – orthodontic treatment is carried out, along with monitoring their jaw growth. Primary cleft lip and palate surgery consistently result in unfavorable maxillary growth resulting in midfacial hypoplasia, which subsequently results in anterior-posterior maxillary hypoplasia leading to the development of secondary cleft abnormalities such as a skeletal base in class III, concave midfacial profile and deformed dental arches<sup>3</sup>. The two factors which may cause the irregular facial appearance of treated cleft children may be an inherent developmental impairment or iatrogenic causes introduced by treatment<sup>4,5,6</sup>. However, Bishara et al<sup>4</sup> suggested that maxillary deficiency is secondary to surgical repair.

A thorough understanding of craniofacial morphology and development is necessary for every team member of the craniofacial unit, including orthodontists, oral and maxillofacial surgeons, ENT surgeons and plastic surgeons. Current multi-specialty care focuses heavily on physical health, frequently neglecting the social problems of care. The parents' and patients' perceptions and needs are a critical component of the eventual outcome, yet they are frequently overlooked<sup>7</sup>. Since dental surgeons and orthodontists are actively interested in improving not only the dentition but also the entire dentofacial complex and the patient as a whole, psychological factors can be taken into consideration for a diligent doctor too.

The family environment in which a cleft lip and palate child grows is very crucial and a significant element in the recovery phase is of a child with a facial cleft. A cleft child in his/her growing stages would be heavily impacted and easily influenced by the attitudes, expectations and degree of support shown by the parents<sup>8,9</sup>. The child perceives his parents' feelings towards the cleft as of paramount importance and plays a major factor in developing a child's esteem. The parents usually expect a normal baby at the time of delivery. Even after sophisticated devices like ultrasonic scanners, etc., a baby with a cleft is seldom expected to be born. The parents' initial emotional response may be puzzled, surprised, grieved and guilty, although this is not necessarily universal<sup>10,11</sup>. Such families rarely discuss the cleft anomaly comfortably in the open and often surfaces during visits to the cleft center, while talking to a professional. The parents and their children may experience a mental trauma or crisis that is handled according to their strengths and weaknesses. These reactions, in turn, depends upon the parents' previous background and their ability to cope with stress.

Children with clefts report being shyer and socially inhibited compared to non-cleft children. Quite often, these children detect a negative reaction from their parents and the people around them. Still, fortunately, in some cases, children often discern that their parents took pride in them amid the family's current anxieties and pressures throughout their schooling<sup>12</sup>. Increasing a child's social skills, encouraging them to participate in sports and group activities might help them to boost their confidence and might act as a compensatory mechanism for both parent and child, for the problems experienced as a result of the child's appearance. This compensation helps families to cope with the social stigma present in the current society. The happiness of a cleft infant with their appearance and their willingness to physically engage with others in society has a huge effect on their psychological well-being. How individuals perceive themselves is influenced by how others respond to them socially.

People who negatively view facial appearances, which deviate from the norm, might elicit unfavourable social responses from cleft lip and cleft palate (CLCP) individuals. This particular social rejection or 'stigmatism' is noticed by Cleft Lip and Palate (CLP) affected individuals and might hurt their minds growing up. This fearful anticipation of social rejection is clearly reflected when they start giving unfriendly responses in the next social encounter. This, in turn, leads to a hesitation in getting involved in social activities. If their feelings of self-esteem are constantly low, they might be at risk for developing psychological problems. There is preliminary evidence from a Danish study<sup>13</sup>, which suggests that the suicide rate amongst CLCP patients is twice that of individuals without CLCP.

A study by Broder et al<sup>2</sup> shows that only 20% of cleft teams worldwide carry out a routine psychological assessment of their patients during clinics. Based on research undertaken by mental health experts, 56 percent of cleft patients had concerns that require psychosocial referral. The incidence increases with age (for 6-12 years -62 percent, for 12-18 years - 72 percent). The frequency of these problems is higher in males than in females. These include behavioural, cognitive, emotional and family problems. Often parents blame themselves for the malformation and can display psychological disturbances subconsciously. This condition will occur whether or not the parents have been told by prenatal ultrasonographic inspection about the existence of the cleft. While there is no intrauterine medication for CLP, early intervention and counselling help both mother and child.

In certain cases, because of alleged feeding issues, the mother and child are temporarily separated. For parents and patients who need extra help and motivation during this delicate time, initial therapy in a cleft centre is necessary. Parents require time to respond to the realities of the malformation and sufficient time to educate themselves about the disorder in order to help them inform their children as well. Thus, the initial shock of the diagnosis usually can be overcome by a systematic and planned counselling.

Basic information on the malformation must be given in the first meeting and a long-lasting confidential relationship must be formed between the cleft team and the patient. A study done by Noor et al<sup>3</sup> suggested that even though 83% of the patients reported that their self-confidence was affected by their cleft condition, at the therapeutic session, only a few told their parents and their specialists. Most of them felt 'nervous' or 'difficult' to discuss matters with their specialists. The counselling

should be tailored according to each individual and expert psychological opinion can be taken to improve the effectiveness of the counselling. Another issue that adequate prenatal therapy might fix is the anxiety of the parents regarding the child's appearance and the speech issues that the child may develop. With structured counselling, it is possible to give the parents and patients an insight into these factors. Current multi-specialty treatment is mainly directed at physical recovery, with often overlooked clinical care problems. Therefore, this study is conducted to shed light on the psychological issues a cleft patient goes through.

## **AIM AND OBJECTIVES OF THE STUDY**

### **AIM:**

- To assess the various psychological factors of cleft lip and palate patients during orthodontic treatment.

### **OBJECTIVES:**

To evaluate if patients with cleft lip and/or palate are at increased risk of impaired psychosocial functioning.

- To evaluate anxiety of cleft lip and/or palate patients.
- To evaluate depression of cleft lip and/or palate patients.
- To evaluate self-esteem of cleft lip and/or palate patients.
- To evaluate happiness with respect to the appearance of cleft lip and/or palate patients.

## **REVIEW OF LITERATURE**

Rosenberg (1965)<sup>14</sup> introduced a 10-part scale that tests global self-esteem by comparing positive and negative self-esteem. All issues are replied using a Likert 4-point scale model that varies from strongly agreeing to disagree strongly. People whose self-esteem is strong seem to be more likable and attractive, to have better relationships and to please others better than people with low self-esteem. Low self-esteem may help to outsource activity and delinquency. The study revealed, however, that there are no effects or that the effect on self-esteem disappears when other variables are monitored.

Noor et al(2005)<sup>15</sup> conducted a cross-sectional study on sixty cleft lip and palate patients (12 to 17 years of age). They were given a questionnaire that included the Child Interview Schedule, the Parents Interview Schedule, and the Cleft Evaluation Profile (CEP). The results of the questionnaire stated that patients were teased because of their clefts-related features such as speech, teeth, and lip appearance and felt their self- confidence was affected by the cleft condition. Patients and parents showed a significant level of satisfaction with the treatment provided by the cleft team. The study concluded that cleft patients were teased because of their clefts, which affected their self-confidence.

Orlagh et al (2005)<sup>16</sup>: did a cross-sectional study and evaluated the psychosocial functioning among 160 children and adults with CLP. The results showed that teasing was greater among participants who had a cleft lip and/or palate and it was a significant predictor of poorer psychological functioning. They found that children with a cleft lip and/or palate as part of their normal cleft treatment need psychological testing, based primarily on their teasing history.

Sinko et al (2005)<sup>17</sup>: did a study on 70 adult patients with CLCP. The patients themselves and five specialists measured the aesthetic and functional effects using a visual analogue scale. Patients have answered the MOS Short-Form 36 questionnaire to measure the quality of life concerning health. The result showed that patients rated their esthetic outcome significantly worse than the experts did. The questionnaire on health-related quality of life showed poor scores for only two subscales, i.e., social interaction and emotional involvement. Lip and nose surgery seems to be of particular significance for people with a cleft lip and palate. The procedure does not always fulfil cleft patients who do not require secondary therapy.

Landsberger et al(2006)<sup>18</sup> conducted a questionnaire study on thirty-three cleft patients with total clefts of lip, alveolus and palate, to assess their satisfaction with the treatment result and their facial appearance. Patient satisfaction was associated with the type of repair of the alveolar cleft. The study concluded by stating aesthetics gain increases the importance of self-perception. Therefore, patient comfort with their facial expression should then step even deeper into the emphasis of cleft therapy.

Marcotty et al (2009)<sup>19</sup>: did a questionnaire study by displaying 3D scans of 30 adult patients with CLP and standardizing extra and intraoral photographs to 10 orthodontists, ten oral surgeons and fifteen laypersons regarding facial balance, beauty, as well as pleasure and a willingness or sign for additional care. Analysis results suggest that the highest degree of asymmetry was observed in the midface of patients with CLP. Patients influenced by CLP's self-perception doesn't align with clinical outcomes or how people perceive them. Clinicians should be open to demands for redress from adult patients and thoroughly evaluate the patient's self-perception.

According to Spielberger et al(2009),<sup>20</sup> anxiety, frustration, depression, and curiosity are important indicators of psychological distress and well-being, which require careful evaluation. To measure such a vital psychological sign, which is critically important in diagnosis, the State-trait anxiety inventory(STAI) was developed, which consisted of two 20 point questionnaire each, which helped us assess and understand the emotions with respect to anxiety accordingly.

Avinash De Sousa et al (2010)<sup>21</sup>: he reviewed an article on psychological issues in acquired facial trauma. He concluded that it is important to regularly ask patients how they are dealing with the changes that have occurred since their facial appearance has changed. And the most important step is to develop a consistent and trusting relationship with a mental health professional who can confidently and enthusiastically refer your patients.

Demir et al(2011)<sup>22</sup> conducted a study that included twenty children from 6 to 16 years of age with NSCLP and forty healthy children. The age and sex associated with the community of cases acted as monitors. Psychiatric interviews and scales assessed children. Their findings showed that in children with NSCLPP, social anxiety disorder ( SAD) and major depressive disorder ( MDD) were more prevalent. The seriousness of the presence and ability of lip deformities, dental integrity, feeding and articulation issues are correlated with global clinical functioning. Their research concluded that children with NSCLP, especially SAD and MDD, are at risk for developing psychopathology. The above cleft-related causes and articulation issues may be the focus of psychological illness preventive and recovery strategies in these children.

Houghton et al(2012)<sup>23</sup> conducted a study using the short four-item Center for Epidemiological Studies Depression Scale (CES-D) on school children of an Irish school and found that 27% of the participants were at risk for depression and that there's no significant difference between age and gender.

Papamanou et al (2012)<sup>24</sup>: did a study by presenting five standardized head photos of 12 Caucasian patients to adult laypeople, orthodontists and oral surgeons. And each of them had to answer on a VAS. The three participants were fairly pleased with the jaw and face aesthetics. They concluded that professionals report greater satisfaction with the aesthetic outcome of cleft lip and palate treatment and evaluate the cleft aesthetics more favourably than laypeople.

Foo et al (2013)<sup>25</sup>: did a cross-sectional study and the purpose of this research was to compare the scores of clinicians and laypeople with and without a cleft in the facial aesthetics of adult patients previously treated for cleft. VAS measured it. The specialists and non-surgical practitioners valued facial aesthetics slightly lower and had a poorer understanding of the need for more care than those with and without a cleft. The laypeople with a cleft facial aesthetic scored substantially higher and had a lower reported need for more care than people without a cleft.

Gassling et al (2014)<sup>26</sup> made a parent-child video for 15 families with cleft lips and palates similar to 20 non-migraine families and 20 families with migraines. They made children solve a puzzle within a specified time with either their mother or father. They found out that in families with a child with CLP, mothers tried to support their children more often. Children showed greater control for both parents than children in stable families and were affected by migraine. In comparison, children with CLP depended less on their fathers for support, and less often disrupted their

families. They concluded that psychosocial compensatory processes in the family setting might reflect independent activity among children with CLP assisted by their parents.

Stock et al (2015)<sup>27</sup> conducted a study by interviewing fifty-two CL/P patients over the telephone to explore the psychological adjustment and possible support needs from their perspective. In relation to discharge from the program, subsequent surgery as adult, social and romantic relationships, participants reported several difficulties, etc. The findings show that most adults with a cleft respond well to these difficulties and experience several good results. Their research concluded that adults with CL / P could need social assistance, knowledge about the heritability of cleft, signposting and referrals from non-specialists. We need more study to define the factors leading to psychological trauma and resilience.

Marchad et al(2015)<sup>28</sup>: conducted a multicenter prospective study by including 55 patients with CLCP who were asked to complete a questionnaire based on three parts: surgical outcomes, taunting and its impact, socio-economic status. Regarding the psychological impact of taunting, 50 % of patients reported anxiety, 31% depression and 26.3% of patients reported lifetime markers. Twenty-nine percent of patients at one time or another did not want to go to school because of the bullying. This study concluded by stating taunting is common in children with CLP and that for healthcare practitioners, it is important to be conscious of this issue in the context of a multidisciplinary approach.

Stock et al (2016)<sup>29</sup> conducted a study to understand why some individuals cope well while others struggle and stated that it is the key to psychological research. They interviewed 52 adults born with CL/P which included three main themes:

"background" factors (age, gender, sexual orientation, culture, etc.), "external" factors (treatment autonomy, familial coping and support, etc.), and "internal" psychological factors (perceptions of distinction, tingling and noticeability, social approval, optimistic development, etc.). They concluded that psychologists play a major role in tackling appearance-related concerns, designing materials, supporting patient decision-making, enhancing social engagement, and delivering clinical professional assistance.

Riff et al (2017)<sup>30</sup>: did an international qualitative study and the goal of the research was to establish a conceptual framework for a cleft patient by gaining a comprehensive overview of topics that people consider relevant. And performed this on 136 people, across six countries. They concluded that participants described concepts of interests in 3 top-level domains- appearance, health-related quality of life, facial function.

Alberconi et al(2018)<sup>31</sup>conducted a retrospective study intending to assess the orthodontic burden of care of patients. Their study had one hundred files of UCLCP patients whose treatment had been completed. Duration of orthodontic treatment, travelled miles, number of instruments and surgical procedures performed. The most extreme malocclusion subgroup had a longer period of orthodontic treatment, a higher number of surgical operations and a longer reach. They concluded by stating patients with higher severity of initial malocclusion faced a higher treatment burden than patients with lower severity of initial malocclusion. Studies and initiatives to reduce the cost of treatment should concentrate on reducing maxillary development deficiencies associated with primary surgery.

Raghavan et al (2018)<sup>32</sup> conducted a study on eighty patients (aged 11–19 years) comprising 40 CLP and 40 non-CLP who were administered the 'Psychosocial Impact of Dental Aesthetics Questionnaire' (PIDAQ), Satisfaction with the Life Scale (SWLS) and Esthetic Component (AC) questionnaire of the Index of Orthodontic Treatment Need (IOTN) rated individually by patients together with IOTN-AC rated by the patient. The outcome indicated that the PIDAQ subpart scores differed between the two groups for aesthetic consideration, with the CLP group scoring slightly lower. For both groups, the parents' IOTN-AC score was significant ( $P < 0.05$ ) higher than the patient score, especially for teenage subjects. Their study concluded that the parents rated the malocclusion of their child more critically than the child itself. A lot of the CLP party had difficulty using the IOTN-AC to classify themselves. Attitudes, in particular views of front teeth beauty, are key variables that affect a patient's psychological self-concept and social trust.

Bjerke et al (2018)<sup>33</sup> conducted a study to check the agreement between participants with CLCP and their parents. The study concluded that the participants and their parents had a similar fashion of disagreement on the the Questionnaire of Strengths and Difficulties (SDQ). Their study concluded that these differences are due to various perspectives of the child's adjustment.

Mario et al (2018)<sup>34</sup>: reviewed the subjective effects and problems with orthodontic treatment in 477 unilateral cleft lip and palate patients in Japan as an inter-clinic collaborative study. They concluded that satisfaction after treatment was high. Orthodontic treatment also positively affected speech.

Mariano et al(2019)<sup>35</sup> conducted a study to assess the orofacial dysfunction in cleft individuals and compared to non-cleft patients. One hundred twenty patients were selected and divided into two groups-cleft and non-cleft individuals and each individual was interviewed and the Nordic orofacial test was used to assess orofacial dysfunction. They concluded that individuals with cleft lip and palate showed more orofacial dysfunction, like breathing, chewing, swallowing and dryness of the mouth than non-cleft patients, without gender differences, after being assessed through the Nordic orofacial test.

## **METHODOLOGY**

### **STUDY DESIGN**

A cross-sectional descriptive study on patients who had cleft lip and/or palate.

### **SOURCE OF DATA**

- All required data was collected from the patient reporting to the Department of Orthodontics and Dentofacial Orthopaedics, KLE Academy of Higher Education & Research, KLE VK Institute of Dental Sciences, Belagavi - 590010

### **INCLUSION CRITERIA:**

Patients fulfilling the following criteria were included:

- Unilateral or bilateral cleft lip and/or palate
- Repaired non-syndromic cleft lip and/or palate
- Both male and female patients
- 8-30 years of age
- Who had normal cognitive functions
- Who were able enough to communicate

### **EXCLUSION CRITERIA:**

- Patients who were incapable of communication
- Patients who refused to give consent

### **SAMPLE SIZE ESTIMATION**

- In order to be subjected to statistical analysis, 90 patients were evaluated.
- All the cleft patients, including new walk-in as well as on-going cases, from October 2018 to March 2020, reporting to the Department of Orthodontics and Dentofacial Orthopaedics, KLE Academy of Higher Education & Research, KLE VK Institute of Dental Sciences, Belagavi - 590010 as the sample size will be taken.
- The sample size was calculated using the following tests:
  - Chi-square test.
  - Independent t-test.
  - Mann-Whitney U test.
  - Karl Pearson's correlation coefficient.

### **PERMISSIONS OBTAINED**

- Institutional ethical clearance.
- Informed consent of each patient prior to administering the questionnaire

### **TOTAL BUDGET**

- Material cost: Rs. 3,750
- Equipment cost: Nil
- Cost incurred during investigation: Nil
- Cost incurred for statistical analysis: Rs. 3,000

### **FUNDING DETAILS:**

- No funding from any external source was required to conduct the study.
- I, Dr. Poojit Rasalkar, took up the financial responsibility of my research and bore all the expenses incurred during the study.

### **METHODOLOGY**

#### **SELECTION OF SUBJECTS**

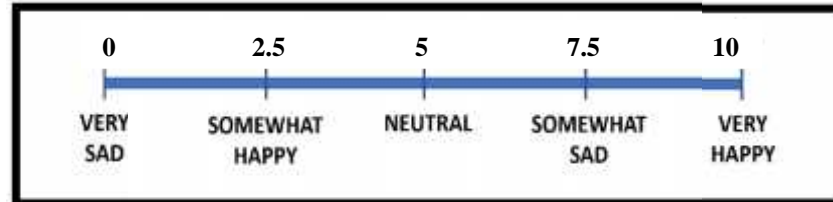
Patients who had cleft lip and/or palate reporting to the Department of Orthodontics and Dentofacial Orthopaedics, KLE Academy of Higher Education & Research, KLE VK Institute of Dental Sciences, Belagavi - 590010

#### **INSTRUMENTS AND MATERIALS**

##### **QUESTIONNAIRES:**

- The Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI)<sup>36</sup> - was used to assess to how anxious one feels at that moment. The scale used in the current study was the same as the study done by Marteau et al<sup>36</sup>
- The Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D)<sup>37</sup> - was used to measure depression, covering six major symptoms area, which includes depressed mood, feelings of worthlessness/guilt, a sense of hopelessness/helplessness, loss of appetite, psychomotor retardation, and sleeps disturbance.
- Rosenberg self-esteem scale <sup>38</sup> – was used to evaluate self-esteem among cleft patients.

- Happiness with respect to facial appearance: visual analogue scale<sup>39</sup> – was assessed using a 10 cm visual scale with 0 being very unhappy on the left-hand side of the scale and 10 being very happy on the right-hand side of the scale



- A self-administered questionnaire – administered in the vernacular language of the patient, based on a review of the literature to assess the factors contributing to the psychology of cleft patients.

## **PROCEDURE OF THE STUDY**

The factors contributing to the psychological changes during orthodontic treatment was assessed on cleft lip and/or palate patients reporting to the Department of Orthodontics and DentofacialOrthopaedics, KLE Academy Of Higher Education and Research, KLE VK Institute of Dental Sciences, Belagavi, for orthodontic treatment. An assessementof a total of 90 patients was done.

The final compiled questionnaire made in English was translated into Kannada and Marathi. These are the languages understood by the patients in Belagavi, Karnataka. In order to assess the precision of the translated questionnaires, they were retranslated back into English. The final compiled questionnaire included:

- Short form of Spielberger State-Trait Anxiety Inventory (STAI)<sup>36</sup>
- Short Four-Item Center for Epidemiological Studies Depression Scale (CESD)<sup>37</sup>
- Rosenberg self-esteem scale (RSE)<sup>38</sup>
- Happiness with respect to facial appearance using a Visual Analogue Scale (VAS)<sup>39</sup>
- Custom made self-administered questionnaire

The questionnaire's reliability and validity were assessed. The reliability was assessed using Cronbach's coefficient, which was found to be 0.80. The validity was assessed using the content validity ratio, which was found to be 0.85 and face validity, which was found to be 90%.

The final compiled questionnaire post necessary modifications were administered to 90 subjects who had cleft lip and/or palate. The responses provided by the patient to each questionnaire (annexure IV) were scored as mentioned in the annexure V, VI, VII, VIII, IX. These scores were entered and analysed using SPSS (Statistical Package For Social Sciences Cooperation, Chicago USA) version 21. Further, a descriptive and inferential analysis was done to reach a final conclusion.

#### **STATISTICAL ANALYSIS:**

- Ñ The responses provided by the patients to the questionnaires were entered and analysed using the SPSS Version 21 (Statistical Package for Social Sciences Corporation, Chicago USA).

- Ñ The different scales used in our questionnaire were subjected to Frequency analysis. A chi-square test of proportion was performed to determine significant differences between each item of the questionnaire scales.
- Ñ Chi-square test of Association and correlation was performed between gender and all the scales to determine whether any significant relationship between the two
- Ñ The anxiety, depression, and self-esteem scores were calculated by totalling the scores of individual questions.
- Ñ A p-value below 0.05 was deemed statistically important.

## RESULTS

Table 1a – Mean age of the study participants

	Minimum	Maximum	Mean	Std. Deviation	p value
Age (in years)	14.00	29.00	20.4333	2.85236	0.000*

\*p value <0.05 statistically significant

Table 1b: Age wise distribution of patients

Profile	Number of patients	Percent of patients
<b>Age groups</b>		
<=20yrs	48	53.33
>=21yrs	42	46.67
Mean age	20.43	
SD age	2.85	

\*p value <0.05 statistically significant

Table 2 – Distribution of study participants according to Gender

Gender	Frequency	Percent	P value
Male	46	51.1	0.833
Female	44	48.9	
Total	90	100.0	

\*p value <0.05 statistically significant

**Tables 3 (Q1-Q6) - Distribution of study participants according to Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI)**

<b>Q1. I feel clam</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Moderately</b>	23	25.6	0.000*
	<b>Somewhat</b>	66	73.3	
	<b>Not at all</b>	1	1.1	
	<b>Total</b>	90	100.0	

<b>Q2. I am tense</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Not at all</b>	63	70.0	0.000*
	<b>Somewhat</b>	6	6.7	
	<b>Moderately</b>	18	20.0	
	<b>Very much</b>	3	3.3	
	<b>Total</b>	90	100.0	

<b>Q3. I feel upset</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Not at all</b>	65	72.2	0.000*
	<b>Somewhat</b>	10	11.1	
	<b>Moderately</b>	15	16.7	
	<b>Total</b>	90	100.0	

<b>Q4. I am relaxed</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Very much</b>	1	1.1	0.000*
	<b>Moderately</b>	66	73.3	
	<b>Somewhat</b>	23	25.6	
	<b>Total</b>	90	100.0	

<b>Q5. I feel content</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Very much</b>	5	5.6	0.000*
	<b>Moderately</b>	16	17.8	
	<b>Somewhat</b>	65	72.2	
	<b>Not at all</b>	4	4.4	
	<b>Total</b>	90	100.0	

<b>Q6. I am worried</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Not at all</b>	7	7.8	0.000*
	<b>Somewhat</b>	57	63.3	
	<b>Moderately</b>	9	10.0	
	<b>Very much</b>	17	18.9	
	<b>Total</b>	90	100.0	

\*p value <0.05 statistically significant

**Table 4 – Overall mean score of the Short-form of state scale of the Spielberger State-Trait Anxiety Inventory (STAI)**

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>p value</b>
<b>Overall STAI Score</b>	33.30	66.60	43.84	6.73	0.02*

**Test applied:** frequency analysis, \* indicates statistically significant difference at p<0.05

**Tables 5 (Q1-Q4) - Distribution of study participants according to The Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D)10**

<b>Q1. I am happy</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>A lot</b>	3	3.3	0.04*
	<b>Some</b>	67	74.4	
	<b>A little</b>	17	18.9	
	<b>Not at all</b>	3	3.3	
	<b>Total</b>	90	100.0	

<b>Q2. I felt like kids were not friendly or they did not want to be with me</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Not at all</b>	69	76.7	0.000*
	<b>A little</b>	20	22.2	
	<b>Some</b>	1	1.1	
	<b>Total</b>	90	100.0	

<b>Q3. I felt sad</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Not at all</b>	63	70.0	0.000*
	<b>A little</b>	18	20.0	
	<b>Some</b>	9	10.0	
	<b>Total</b>	90	100.0	

<b>Q4. It was hard to get things going</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>A little</b>	5	5.6	000*
	<b>Some</b>	20	22.2	
	<b>A lot</b>	65	72.2	
	<b>Total</b>	90	100.0	

\*p value <0.05 statistically significant

**Table 6 – Overall mean score of the Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D)**

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>p value</b>
<b>Overall CES-DC score</b>	3.00	7.00	4.53	0.96	0.023*

**Test applied:** frequency analysis, \* indicates statistically significant difference at p<0.05

**Tables 7 (Q1-Q10) - Distribution of study participants according to the Rosenberg self-esteem scale**

<b>Q1. I feel that I'm a person of worth, at least on an equal plane with others</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Strongly disagree</b>	5	5.6	0.000*
	<b>Disagree</b>	61	67.8	
	<b>Agree</b>	19	21.1	
	<b>Strongly agree</b>	5	5.6	
	<b>Total</b>	90	100.0	

<b>Q2. I feel that I have a number of good qualities.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Disagree</b>	7	7.8	0.000*
	<b>Agree</b>	16	17.8	
	<b>Strongly agree</b>	67	74.4	
	<b>Total</b>	90	100.0	

<b>Q3. All in all, I am inclined to feel that I am a failure.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Agree</b>	23	25.6	0.00*
	<b>Disagree</b>	63	70.0	
	<b>Strongly disagree</b>	4	4.4	
	<b>Total</b>	90	100.0	

<b>Q4. I am able to do things as well as most other people.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Disagree</b>	18	20.0	0.00*
	<b>agree</b>	5	5.6	
	<b>Strongly agree</b>	67	74.4	
	<b>Total</b>	90	100.0	

<b>Q5. I feel I do not have much to be proud of</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Strongly agree</b>	4	4.4	0.00*
	<b>Agree</b>	64	71.1	
	<b>Disagree</b>	17	18.9	
	<b>Strongly disagree</b>	5	5.6	
	<b>Total</b>	90	100.0	

<b>Q6. I take a positive attitude toward myself.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Disagree</b>	7	7.8	0.000*
	<b>Agree</b>	16	17.8	
	<b>Strongly agree</b>	67	74.4	
	<b>Total</b>	90	100.0	

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<b>Q7. On the whole, I am satisfied with myself.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Disagree</b>	3	3.3	0.005*
	<b>Agree</b>	21	23.3	
	<b>Strongly agree</b>	66	73.3	
	<b>Total</b>	90	100.0	

<b>Q8. I wish I could have more respect for myself.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Strongly agree</b>	21	23.3	0.000*
	<b>Agree</b>	64	71.1	
	<b>Disagree</b>	5	5.6	
	<b>Total</b>	90	100.0	

<b>Q9. I certainly feel useless at times.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Agree</b>	19	21.1	0.000*
	<b>Disagree</b>	64	71.1	
	<b>Strongly disagree</b>	7	7.8	
	<b>Total</b>	90	100.0	

<b>Q10. At times I think I am no good at all.</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Agree</b>	6	6.7	0.002*
	<b>Disagree</b>	17	18.9	
	<b>Strongly disagree</b>	67	74.4	
	<b>Total</b>	90	100.0	

\*p value <0.05 statistically significant

**Table 8 – Overall mean score of the Rosenberg-self-esteem scale**

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>p value</b>
<b>Rosenberg self-esteem total score</b>	19.00	25.00	22.33	2.96	0.000*

**Test applied:** frequency analysis, \* indicates statistically significant difference at p<0.05

**Tables 9 (Q1-Q5) - Distribution of study participants according to the other phenomenon**

<b>Q1. What has been your major problem?</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Chewing</b>	26	28.9	0.000*
	<b>None of the above</b>	6	6.7	
	<b>Speech</b>	58	64.4	
	<b>Total</b>	90	100.0	

<b>Q2. Whom do you share feelings with respect to your cleft with?</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Friends</b>	26	28.9	0.000*
	<b>Family</b>	59	65.6	
	<b>None of the above</b>	5	5.6	
	<b>Total</b>	90	100.0	

<b>Q3. Do you like to be treated normally or given more attention by people?</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Given more attention</b>	65	72.2	0.002*
	<b>Treated normally</b>	25	27.8	
	<b>Total</b>	90	100.0	

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<b>Q4. Are you satisfied with the treatment?</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>No</b>	15	16.7	0.000*
	<b>Yes</b>	75	83.3	
	<b>Total</b>	90	100.0	

<b>Q5. What's the first thing you notice about yourself?</b>		<b>Frequency</b>	<b>Percent</b>	<b>p value</b>
	<b>Lips</b>	25	27.8	0.000*
	<b>Nose</b>	4	4.4	
	<b>Teeth alignment</b>	61	67.8	
	<b>Total</b>	90	100.0	

**Test applied:** frequency analysis, \* indicates statistically significant difference at  $p < 0.05$

**Table 10 – Overall mean VAS score of the study participants**

VAS Score	Minimum	Maximum	Mean	Std. Deviation	p value
How happy are you today with your facial appearance?	3.00	9.00	6.43	1.06	0.000*

**Test applied:** frequency analysis, \* indicates statistically significant difference at  $p < 0.05$

**Table 11 - Association between items of STAI scale and Gender**

Gender	STAI scores	
	Chi-square value	p value
Male	9.32	0.408
Female		

**Test applied:** chi-square test, \* indicates statistically significant difference at  $p < 0.05$

**Table 12-Comparison of male and females with mean anxiety, depression and self esteem scores**

Gender	Anxiety		Depression		Self esteem	
	Mean	SD	Mean	SD	Mean	SD
Male	13.30	2.15	4.54	0.96	20.26	2.78
Female	13.02	1.90	4.52	0.98	20.25	3.18
Total	13.17	2.02	4.53	0.96	20.26	2.97
t-value	0.6578		0.1017		0.0173	
p-value	0.5124		0.9192		0.9863	

**Test applied:** t test, \* indicates statistically significant difference at  $p < 0.05$

**Table 13- Comparison of male and females with VAS scores**

Gender	Mean	SD	Mean rank	U-value	Z-value	P-value
Male	6.96	1.03	43.71			
Female	7.16	1.10	47.38	929.50	-0.6659	0.5055

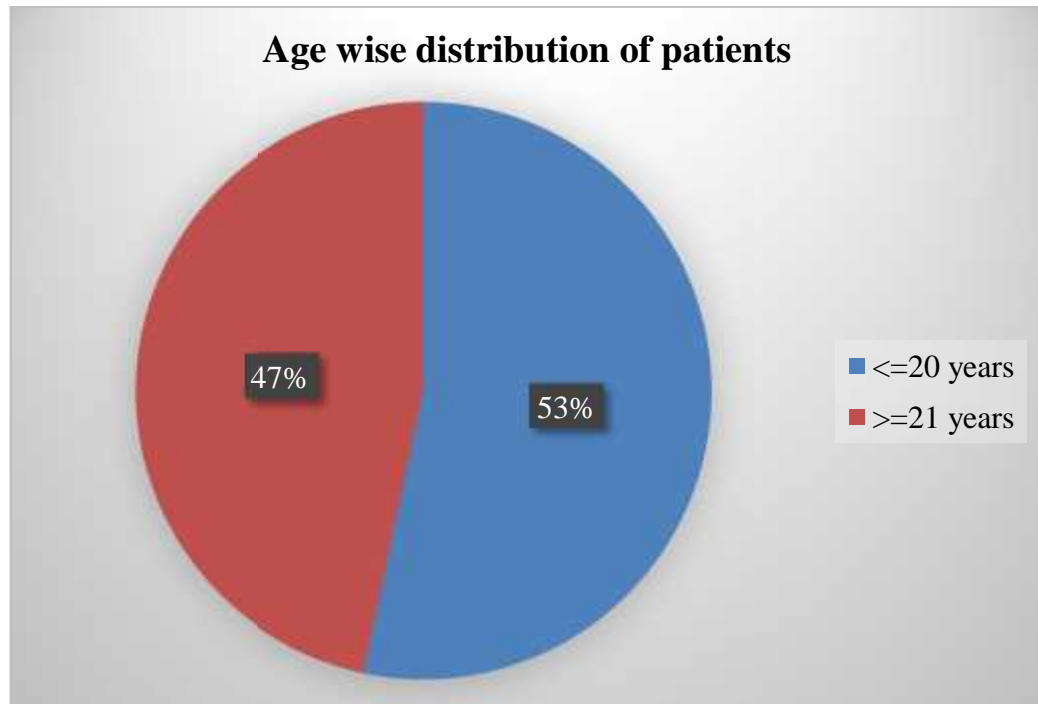
**Test applied:** Mann-Whitney U test, \* indicates statistically significant difference at  $p < 0.05$

**Table 14 -Correlations among anxiety, depression and self esteem of patients**

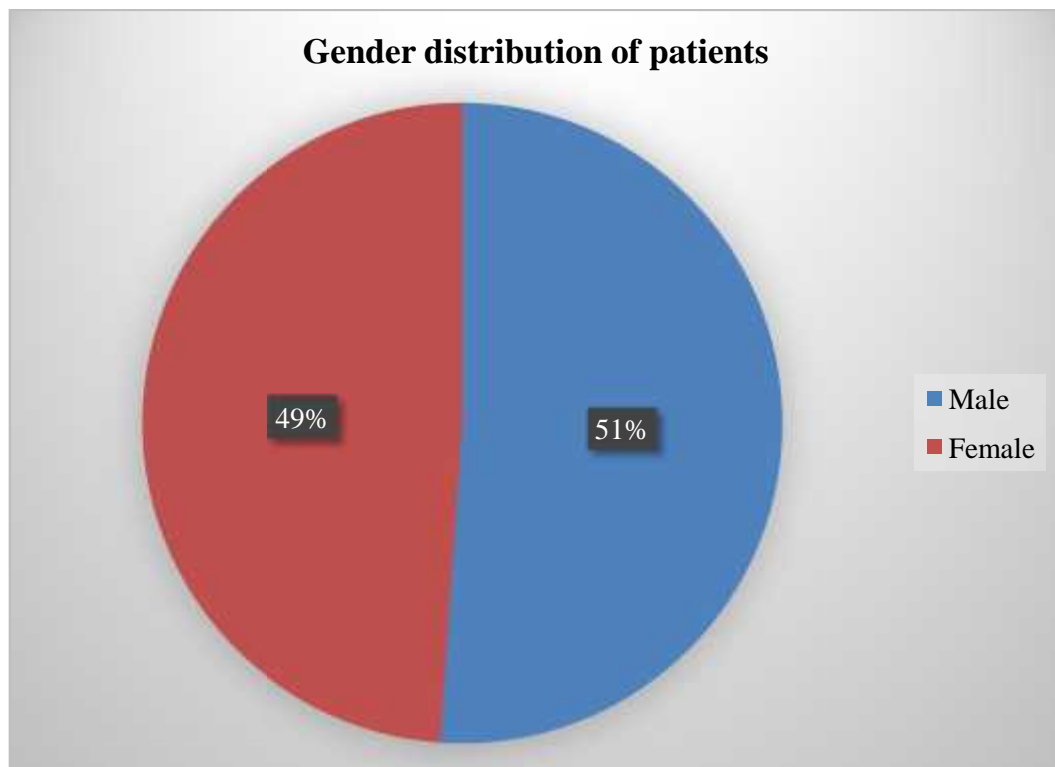
		Anxiety	Depression	Self esteem
Anxiety	r-value	---		
	p-value			
Depression	r-value	0.7270	1.0000	
	p-value	0.0001*	---	
Self esteem	r-value	-0.6978	-0.8120	1.0000
	p-value	0.0001*	0.0001*	---

**Test applied:** Karl Pearson's correlation coefficient, \* indicates statistically significant difference at  $p < 0.05$

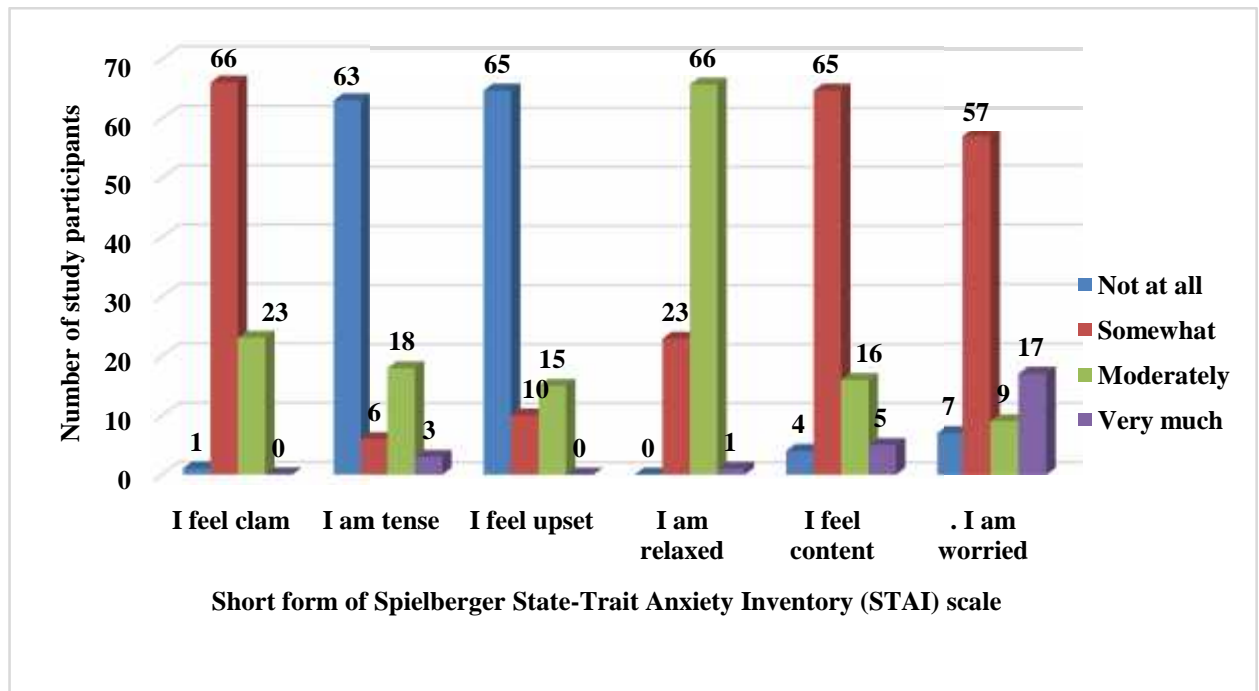
Graph 1 - Age-wise distribution of patients



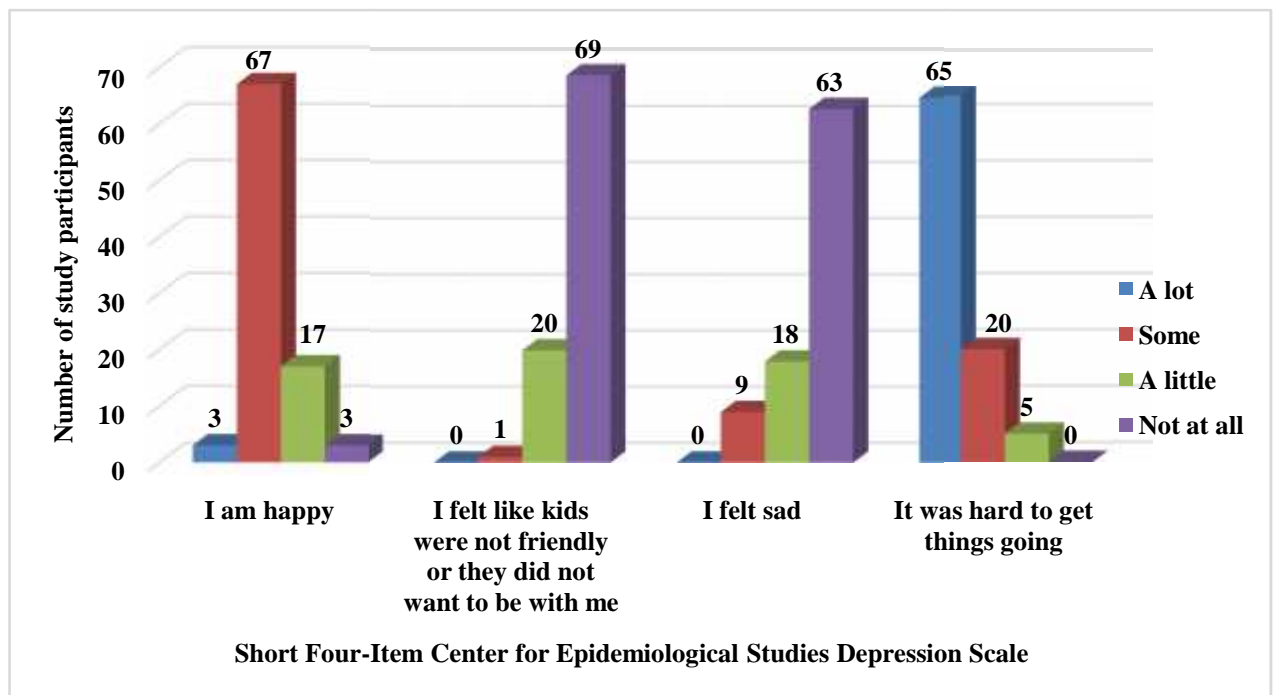
Graph 2 - Gender distribution of patients



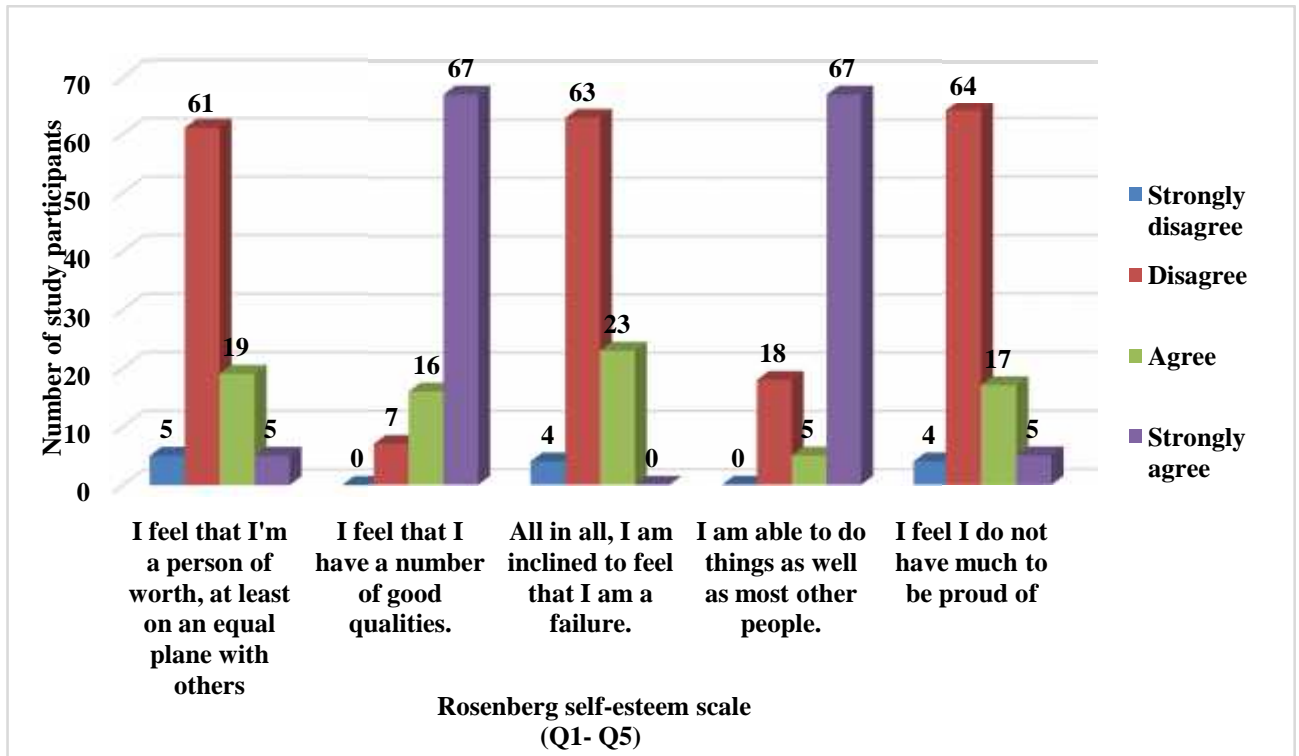
**Graph 3 - Distribution of study participants according to the Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI)**



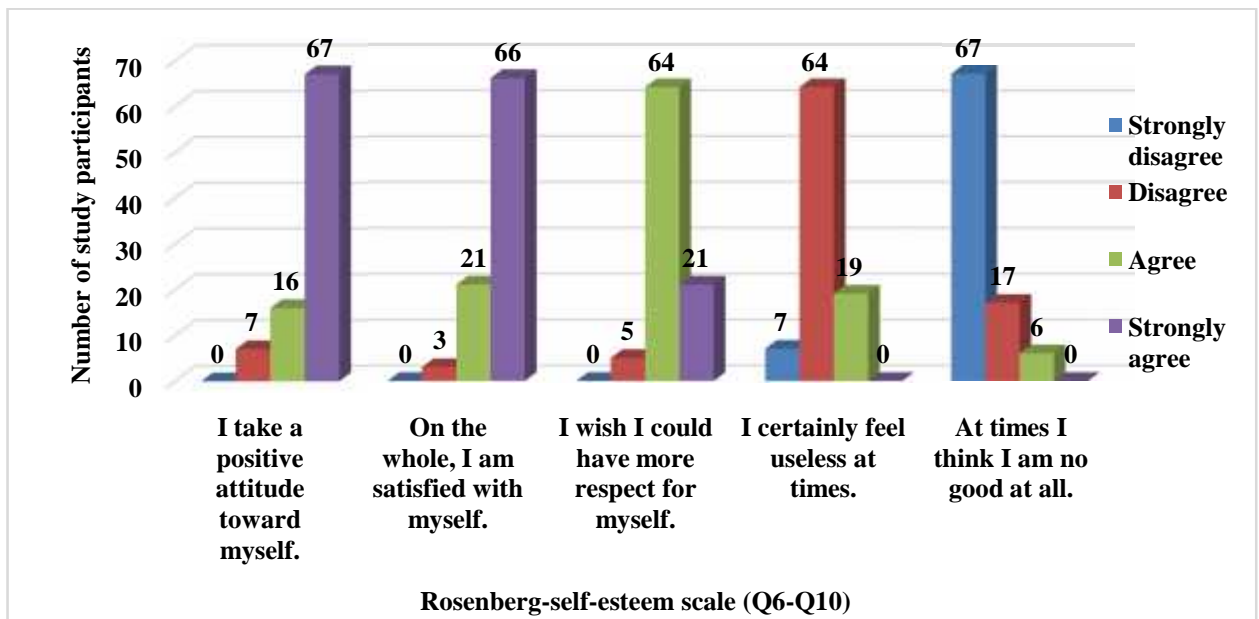
**Graph 4 - Distribution of study participants according to The Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D)**



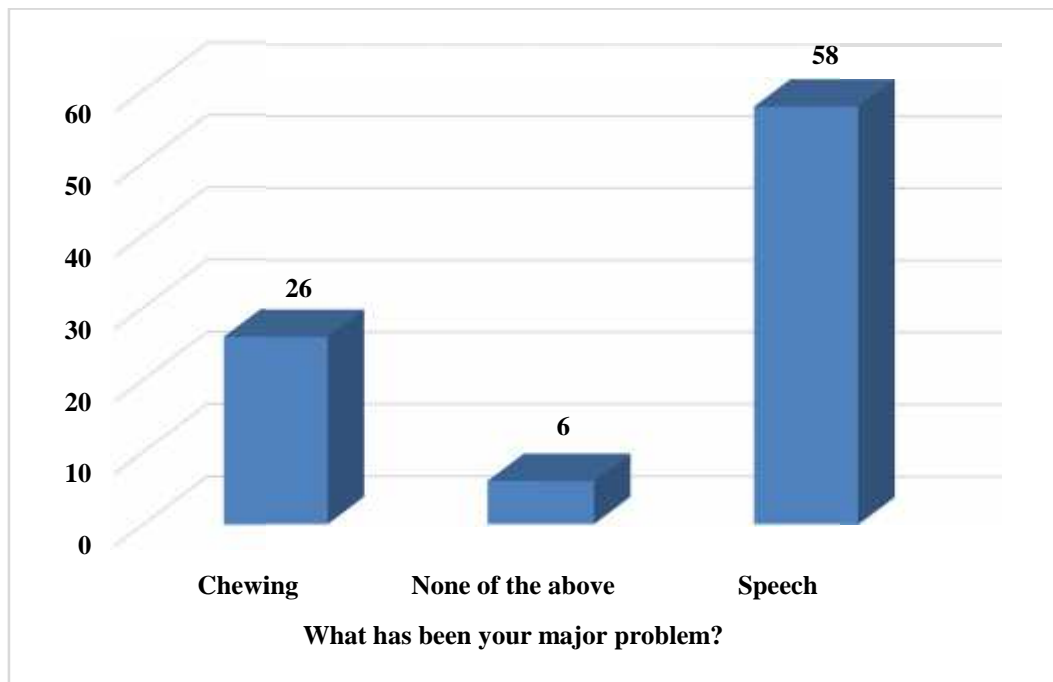
**Graph 5a - Distribution of study participants according to the Rosenberg self-esteem scale(Q1-Q5)**



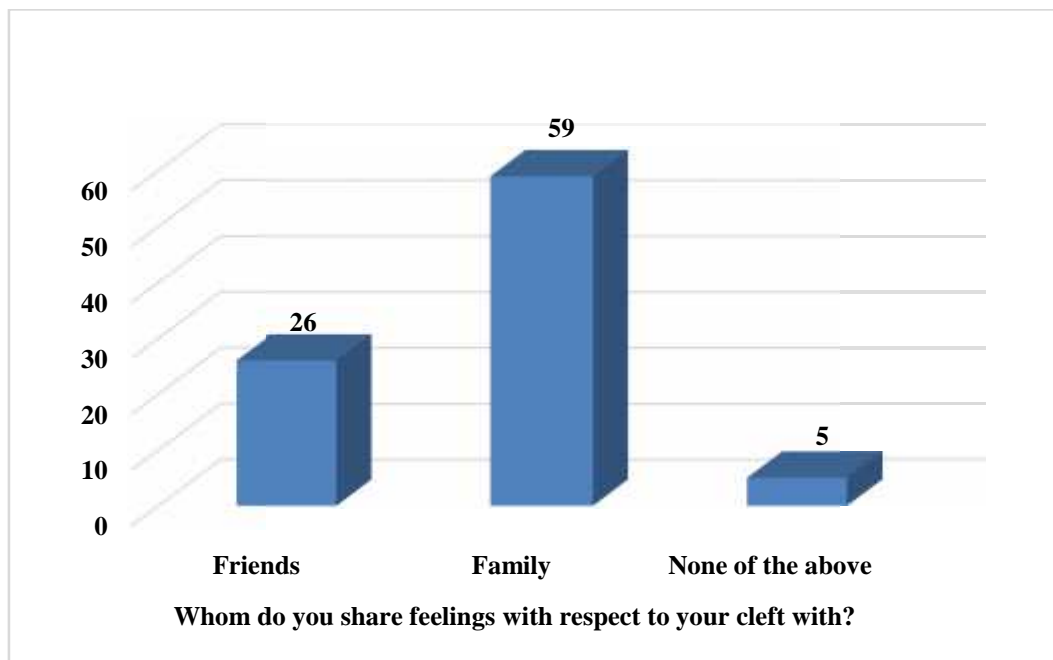
**Graph 5b - Distribution of study participants according to the Rosenberg self-esteem scale(Q6-Q10)**



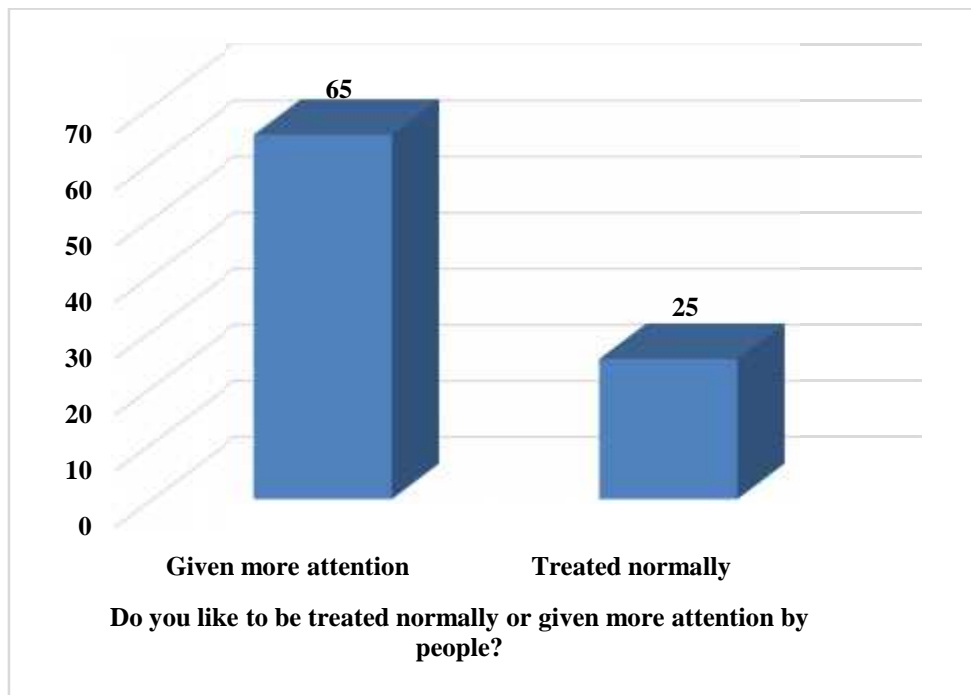
Graph 6 - Distribution of the major problem of the patients



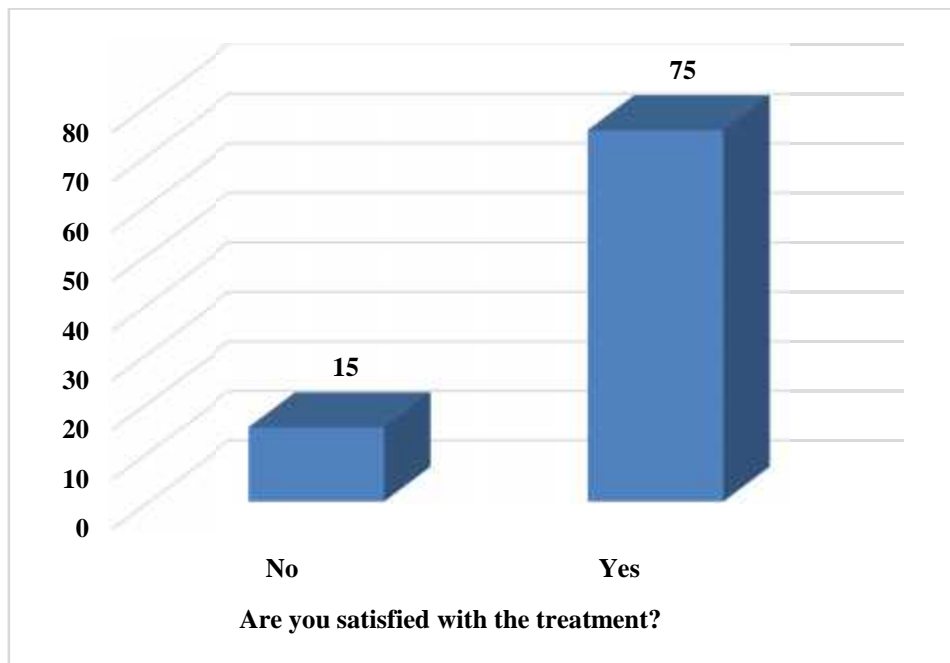
Graph 7 - Distribution of with whom they share their feelings with respect to cleft with



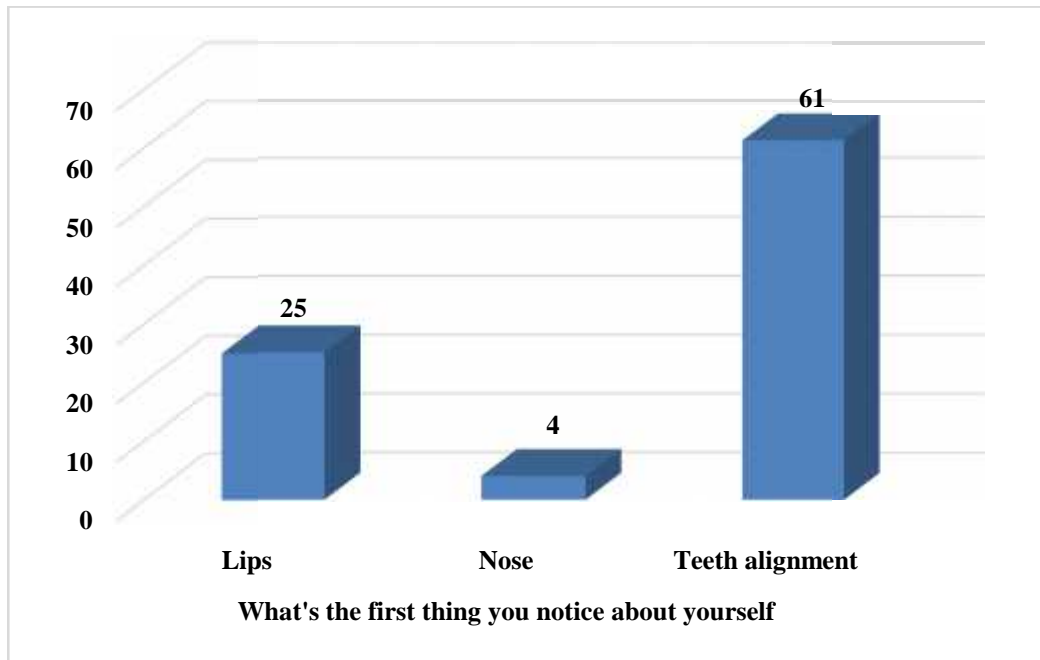
**Graph 8 - Distribution of patients needing more attention or treated normally**



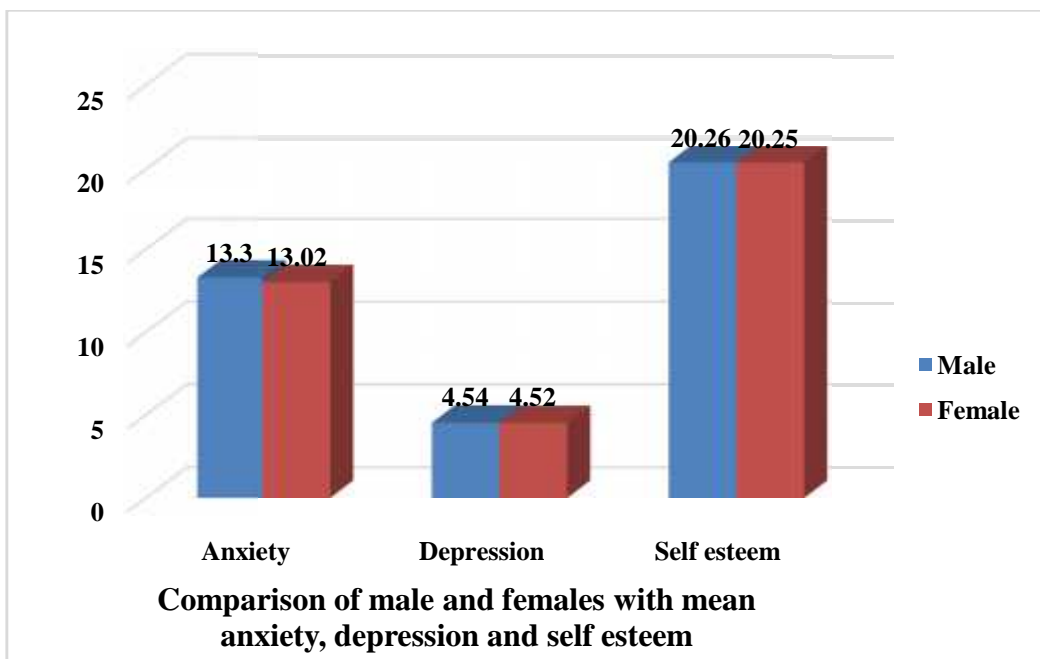
**Graph 9 - Distribution of satisfaction of participants with the treatment**



Graph 10 - Distribution of the first thing they notice about themselves



Graph 11 - Comparison of males and females with mean anxiety, depression, and self-esteem



Among the total study subjects of 90 (n=90), 53.33% of them belonged to a demographic group below 20 years of age and 46.67% of them belonged to the age group of above 21 years, with a minimum of 14 years and a maximum of 29 years in the study. Gender wise distribution of study participants revealed 51.11% of the study population were males and 48.9% were females.

**Tables 1a,1b, 2, and Graph 1 and 2** show the distribution of the study population according to age and gender.

**Assessment of the participants according to the Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI):**

**Table 3 and Graph 3** show question wise distribution is shown in for the Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI)

**Table 4** shows the overall mean score and standard deviation of the Short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI), which is 43.84 and 6.73, respectively, which was statistically significant ( $p = 0.02$ ), indicating that the participants had minor anxiety.

**Assessment of the participants according to the Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D):**

**Table 5 and Graph 4** show question wise distribution of study participants according to The Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D)

**Table 6** shows the overall mean score and standard deviation of the Short Four-Item Center for Epidemiological Studies Depression Scale (CES-D), which is 4.53 and

0.96 respectively, which was statistically significant ( $p = 0.023$ ), indicating minor risk of depression among the cleft participants.

**Assessment of the participants according to the Rosenberg Self-esteem Scale:**

**Table 7, Graph 5a, and Graph 5b** show question wise distribution of study participants according to the Rosenberg self-esteem scale.

**Table 8** shows the overall mean score and standard deviation of the Rosenberg self-esteem scale which is 23.33 and 2.96, respectively, which was statistically significant ( $p = 0.00$ ), indicating normal self-esteem.

**Assessment of the participants according to other phenomenon:**

**Table 9(Q1-Q5)** shows the distribution of study participants according to other phenomenon.

A total of 5 questions were asked, each with different options.

**Table 9(Q1), Graph 6** shows the distribution of the first question, which was "what has been your major problem?" for which 64.4% responded as "speech" as their major problem, 28.9% responded as "chewing," and 6.7% responded as "none of the above," which was statistically significant ( $p = 0.00$ ).

**Table 9(Q2), Graph 7** shows the distribution of the second question, which was "who do you share feelings with respect to cleft with?" for which 65.6% responded as "family" and 28.9% responded as "friends," which was statistically significant ( $p = 0.00$ ).

**Table 9(Q3), Graph 8** shows the distribution of the third question, which was "do you like to be treated normally or given more attention by people?" for which 72.2%

responded as "given more attention" and 27.8% responded as "treated normally," which was statistically significant( $p = 0.002$ ).

**Table 9(Q4), Graph 9** shows the distribution of the fourth question, which was "are you satisfied with the treatment?" for which 83.3% responded as "yes" and 16.7% responded as "no," which was statistically significant( $p = 0.000$ ).

**Table 9(Q5), Graph 10** shows the distribution of the fifth question, which was "what's the first thing you notice about yourself?" for which 67.8% responded as "teeth alignment," 27.8% responded as "lips," and 4.4% responded as "nose," which was statistically significant( $p = 0.000$ ).

**Assessment of the participants according to the VAS for happiness with respect to facial appearance:**

**Table 10** shows the overall mean VAS score and standard deviation of the study participants, which is 6.43 and 1.06 respectively, which was statistically significant ( $p = 0.000$ ), indicating the participants aren't very happy with their facial appearance.

**Assessment of the association between items of STAI scale and gender:**

**Table 11** shows the association between items of STAI scale and gender, for which chi-square test was done and the result was statistically insignificant,  $p=0.408$

**Assessment of the comparison of males and females with mean anxiety, depression, and self-esteem scores:**

**Table 12 and Graph 11** show the comparison of males and females with mean anxiety, depression, and self-esteem scores by t-test, with a p-value of 0.5124, 0.9192,

and 0.9863, respectively, indicating that the differences between sexes are statistically insignificant with respect to anxiety, depression, and self-esteem.

**Assessment of the comparison of male and females with VAS scores:**

**Table 13** shows the comparison of male and females with VAS scores by Mann-Whitney U test, with a p-value of 0.5055, indicating the differences between sexes is statistically insignificant with respect to happiness with respect to facial appearance.

**Assessment of the correlations among anxiety, depression, and self-esteem of patients:**

**Table 14** shows the correlations among anxiety, depression, and self-esteem of patients by Karl Pearson's correlation coefficient, which were statistically significant ( $p = 0.0001$ ), indicating there is a positive correlation between anxiety, depression, and self-esteem between patients

## DISCUSSION

Cleft lip and/or palate (CL / P) psychological change is multifaceted and impacts several domains of functioning. One of the congenital abnormalities most commonly found in humans is the cleft of the lip and/or the palate (CL / P). While the prevalence rate of CL / P varies widely across various geographic areas and ethnic groups, it occurs globally in around one of every 500-700 births per year (World Health Organization, 2012). Although the most visible symptoms of the cleft are typically repaired within the first year of life of the infant, facial scarring, functional issues and/or speech difficulties are likely to persist. Individuals born with CL / P can enrol in a multidisciplinary care process during childhood, including cosmetic and maxillofacial surgery, otolaryngology, orthodontics, speech and language therapy, and psychiatry<sup>3</sup>.

For those afflicted and their family, CL / P and its care will raise several difficulties, disrupting many aspects of psychological and social functioning. Continuous care and doctor visits may be a considerable strain for persons born with CL / P, in addition to remarks, questions, gazing and bullying that can surround a visual and/or audible discrepancy<sup>40</sup>. The previous study has thus illustrated possible issues with physical, mental, cognitive and behavioural development for those born with CL / P. Tentative evidence for the effect on person changes of a number of interposing variables, such as age, form of cleft, gender, ethnicity, socioeconomic status, and in addition to the cleft, the presence of other factors was also seen by Hunt et al<sup>41</sup>. Unfortunately, the results are conflicting and most of the current studies note major methodological shortcomings that preclude the drawing of firm conclusions<sup>3</sup>.

Typically, the parents are surprised at the first glimpse of their child's face after the birth of their child with a cleft lip and palate. The state of the family is classed as a 'psychosocial emergency'<sup>42,43</sup>, which often leads to disappointment and later to a period of emotional crisis for the parents. Often the parents feel guilty and feel responsible for their child's cleft. The child, later in life, realizes his/her differences and has a different outlook towards what is perceived as normal by the society. Faced with the complexities of a noticeable difference, the mechanisms involved in managing the disorder, and other people's social reactions, difficulties for people with cleft lip and/or palate (CL / P) may arise concerning low mood, feelings of shame or inadequacy, depression, anxiety, appearance dissatisfaction, and behavioural effects such as social avoidance and aggression<sup>44,40</sup>. Such challenges can theoretically impact many aspects of the life of a person, including social adjustment and relationship issues, academic success and job performance, and long-term emotional well-being. A study on the neurological effect of CL / P on those involved has, to date, provided contradictory findings. While some studies<sup>41, 45, 46</sup> suggest that those born with a cleft history have more psychosocial problems than those without CL / P, although others have found little variations between people with CL / P and population-based control groups. Besides, studies<sup>47, 48</sup> have repeatedly demonstrated the lack of correlation between objective visibility of a condition such as CL / P and the anatomic problems associated with it, like speech problems, appearance deformations, lips, and nose deformation and teeth malalignment and psychological change related to those problems.

Children with CL / P are more vulnerable to tooth loss and normally have a damaged lateral incisor or additional teeth. To encourage good oral hygiene, improve teeth alignment, and/or monitor jaw and bite development during growth, it may

therefore be necessary to consult with a paediatric dentist, family dentist, and/or orthodontist.

Rumsey et al<sup>40</sup> stated that appearance is a common subject that applies to all. Not only is our physical appearance special, but it also plays a vital role in a variety of everyday activities, from social interactions with others to a wide range of health behaviours. The face is especially important to the sense of identity of a person and is the key site of verbal and non-verbal communication<sup>49</sup>. While the 'ideal' image is becoming increasingly unachievable for everyone, those that have an appearance that varies even from the 'standard' face an additional array of challenges. Consequently, the difference between how they think they look and how they believe they should look can be the main source contributing to great anxiety in many teenagers, adolescents, and adults; such distress can result in poorer mental well-being<sup>50</sup>.

During surgery, small plastic tubes (grommets) can be inserted into the eardrum if the child's hearing is severely impaired (often caused by a sticky secretion in the middle ear called Otitis Media with Effusion, or 'glue ear' and if the grommets are unsuccessful, a hearing aid may be required.

Speech tests are usually performed at age 18 months, 3 years, and 5 years. If problems are found with the child's pronunciation and/or use of language, speech and language therapy may be implemented to improve the quality of the child's speech. Articulation issues include lack of oral pressure by draining air into the nostrils, also present in the nostrils as nasal emissions. This is often connected to nares constriction or grimaces arising from an almost vain effort to prevent air deprivation. The main cause of these symptoms is velopharyngeal inadequacy, which occurs primarily during the pronunciation of consonants made by the friction, breathing in a narrow

space, creating a tumultuous rush of air. Hypernasality is the vocal condition usually associated with cleft palate, most often involving velopharyngeal inadequacy<sup>51</sup>. Ramstand et al<sup>52</sup> reported that the overall psychosocial functioning of adult CL/P patients may be at risk and that impairment is related to concerns with speech and facial appearance.

Patients of acquired facial trauma have particular psychological requirements. Patients with orofacial trauma were found to be more likely to show symptoms of depression, anxiety, and aggression compared to a matched normal control group for up to 1 year after trauma<sup>53</sup>. This can be combined with the fact that patients with acquired orofacial trauma have psychosocial problems such as unemployment, lower education, and poor social support<sup>54</sup>. In certain cases, the signs of depression and anxiety may be sub-threshold and do not meet the full diagnostic criteria for a psychological condition. This can also contribute to diagnostic dilemmas and poor treatment of the issue. Reactions such as normative depression, sorrow over the losses they have suffered, reactions to drugs they take, and tiredness those treatment outcomes may be associated with a depressive disorder or episode. Depression puts the patient at an increased risk of suicide, poor conformity, and low recovery and rehabilitation. This, in essence, will affect the quality of life and the recovery from facial trauma<sup>55,56</sup>.

Thompson and Kent<sup>57</sup> noted increased levels of depression and anxiety among people with facial disfiguration. Lockhart et al<sup>58</sup> stated that social isolation, speech and language difficulties, and poor self-image were identified as the problem of cleft patients in his review.

The main psychosocial challenge with most people with any form of cleft is having to deal with the external response to their facial appearance. These everyday social interactions inevitably lead to social alienation for many individuals. Many CL/P individuals restrict their range of social interactions to immediate family members or close friends and the social contacts needed for work<sup>59,60</sup>.

Several comprehensive methods for evaluating social functioning and well-being have been established, particularly those relevant to CL/P, especially in orthodontic consultation where the social functioning evaluation should be more centered to uplift the psychological well-being of them.

#### **Short form of Spielberger State-Trait Anxiety Inventory (STAI):**

One of the most widely used anxiety markers in applied psychology research is the Spielberger State-Trait Anxiety Inventory (STAI). It is a test of anxiety which is accurate and sensible. But the one downside with the STAI is its range, which is 40 items long. This is an obstacle, where the time needed to complete questionnaires is limited. It is a barrier for some patients who are unprepared or unable to complete lengthy scale with repetitive items. The development of a standardized STAI short form could largely overcome these problems.

The STAI is made of two 20-point questionnaires each<sup>61</sup>. The first questionnaire measures state anxiety and the second questionnaire measures trait anxiety. State anxiety is related to how one feels at the moment and trait anxiety is related to how one generally feels. The first questionnaire was produced in 1970(Form X)<sup>61</sup> and the second questionnaire was produced in 1983(Form Y)<sup>61</sup>. The use of a brief questionnaire has several advantages. It is likely to optimize response

rates and reduce response errors, thereby increasing the validity and generalizability of any findings. The longer a questionnaire, the more skewed it will be for those who find it easy to read and write. A brief questionnaire would also minimize the time it takes to complete the survey and the time it takes to rate the results.

Marteau et al<sup>36</sup> have published an article validating and checking its reliability and reproducibility of a short form of the Spielberger State-Trait Anxiety Inventory. We have used the same scale given by Marteau et al<sup>36</sup> in our study. Spielberger (1983) states that equal numbers of items present in anxiety and those absent from anxiety constitute a more stable and consistent measure. The scores range for each subtest is 20–80, the higher scores showing greater anxiety<sup>62</sup>. It was proposed that a cut point of 39–40 identify clinically meaningful symptoms on the S-Anxiety scale<sup>63, 64</sup>.

According to our results, CL/P patients got a mean score of 43.84, which states that they have minor anxiety, which correlates with a study done by Demir et al<sup>65</sup> who reported a score of 36.75 in CL/P patients as compared to normal control individuals. In our analysis, we have found the patients are not satisfied with their facial appearance, which is in line with a report undertaken by Macrussonet al<sup>66</sup> who stated that the predictor of depression and anxiety is related to dissatisfaction with the facial appearance. Behavioral problems were greater among cleft patients as compared to the control group in a study done by Hunt et al<sup>67</sup>. Behavioral problems are also predicted as risk factors for more disorders. Hofstra et al<sup>68</sup> found that high rates of adolescent behavioral issues were risk factors for adult psychiatric disorders.

In our study, the age of the CL/P patients did not appear to have any influence on the occurrence or the severity of anxiety( $p>0.05$ ); similar results were found by

Hunt et al<sup>41</sup>. It has been reported that this particular problem increases as the age of the cleft patient increases<sup>69</sup>.

**The Short Four-Item Center for Epidemiological Studies Depression Scale (CESD):**

The CES-D is a 20-item questionnaire which was given by Radloff<sup>70</sup> in 1977, consisting of items taken from other measures of depression, covering six major symptoms area, which includes depressed mood, feelings of worthlessness/guilt, a sense of hopelessness/helplessness, loss of appetite, psychomotor retardation, and sleeps disturbance. The items were graded on a scale of 0 to 3 in terms of the frequency of occurrence over the last week, with total scores ranging from 0 to 60; higher scores reflect more symptomatology. The CESD is accepted as a predictor of depressive symptoms and as a clinical depression test<sup>71,72</sup>. Validity, reliability, and factor structure over a wide range of demographic characteristics were found to be similar, in general, population samples tested by Radloff<sup>73</sup>; Radloff and Locke<sup>74</sup> and Fendrich et al<sup>75</sup>. Houghton et al<sup>37</sup> came with a short form of the original 20 questions scale and stated that the CES-D might be used by clinicians and researchers to classify possible depression cases which may not meet the clinical diagnostic criteria and also stated that the reduced CES-D four-part version proved almost as accurate a screen as the complete 20-item scale. The four items in the short questionnaire refer to the CES-D items 18, 12, 20, and 15. These four questions focused on depressed affect, positive affect, somatic problems, and interpersonal problems. A total score of 5 or above is considered to be at risk of depression<sup>37</sup>.

According to our results, CL/P patients got a mean score of 4.53, which can be declared as a minor risk of depression, which correlates with a study done by Hunt

etal<sup>67</sup> who got a similar score of 4.78. Demir et al<sup>65</sup> found that the children with cleft were significantly more depressed than the normal control group. In a study done by Millard et al<sup>76</sup> observed that cleft patients were more depressed with respect to their facial appearance and speech problems. Reinherzet al<sup>77</sup> found that early physical disability was a risk factor for adolescent depressive symptoms. It would be fair to believe that CLP children see their disorder as a disease, which may explain in part the increased degree of depressive symptoms. Symptoms of depression in childhood and adolescence are troubling because self-reported depressive symptoms have been found in childhood to predict psychiatric symptoms in adolescence<sup>78</sup>. Besides, early adolescent signs of depression were related to a subsequent increase in the risk of inappropriate alcohol use<sup>79</sup>.

**Rosenberg self-esteem scale (RSE):**

Morris Rosenberg<sup>38</sup> developed the Rosenberg self-esteem scale in 1965. It was originally designed to evaluate the self-esteem in high school students and later was widely used in various other groups, including adults. It is a Likert scale with 10 items that can be answered on a four-point scale from strongly agree to strongly disagree<sup>38</sup>. The responses can be assigned a score between 0-30. Poor self-esteem suggests a scoring of under 15. It is proven to be a credible and legitimate tool to evaluate self-esteem. The recommendations given to the patient when answering to the Rosenberg self-esteem scale is that there are no right or incorrect responses to any question and that they do not explicitly invest much time on any one question.

High self-esteem makes people more likely to speak in groups and criticize the behaviour of the community. Leadership is not specifically a result of self-esteem, but it does indirectly influence self-esteem. In comparison to persons with low self-

esteem, people with high self-esteem display greater group favouritism, which can increase prejudice and discrimination. Self-esteem contributes strongly to happiness. In certain conditions, low self-esteem is more likely to cause depression than high self-esteem. It is assumed that high self-esteem has a positive effect on the development of the child. People with high self-esteem are often shown to appear to be more likable and desirable, to have better relationships, and to have positive views of others than people with low self-esteem.

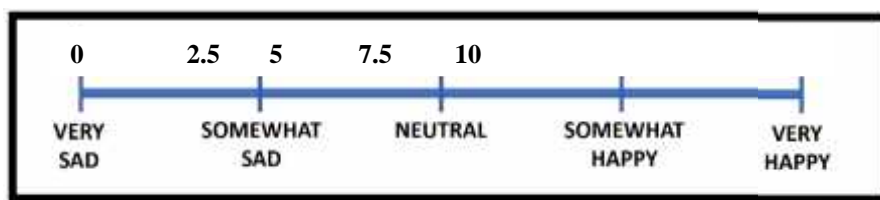
The results of the current research suggest a positive correlation between orthodontic treatment and self-esteem in both males and females undergoing orthodontic treatment. According to our results, we got a mean score of 22.33 for the Rosenberg self-esteem scale; which states that the self-esteem of cleft patients is normal; which correlates with a study done by Hunt et al<sup>67</sup>, who conducted a study on the psychiatric assessment of children with non-syndromic cleft lip and palate and compared with a control of normal individuals and concluded that the cleft patients didn't have lower self-esteem as compared to the control children, who got a mean score of 21.2 using the RSE. They also found no significant difference in scores between CL/P and subjects without CL/P as measured by the Rosenberg self-esteem scale(RSE) and the self-esteem index(SEI). Samretdee H et al<sup>80</sup> reported that the sense of self-esteem of the patients with cleft lip and cleft palate did not differ from normal people.

As implicated by Leonard et al<sup>81</sup>, the explanation for this high or average self-concept could be that children with clefts gain awareness over time of the disability. Snyder and Pope<sup>82</sup> found that certain children and adolescents with craniofacial abnormalities registered lower issue rates than control groups. The

authors<sup>82</sup> interpreted this finding as proof that children and adolescents could build up a positive capacity to deal with psychosocial problems successfully.

**Happiness with respect to facial appearance:**

Satisfaction of the cleft participants for their facial expression was measured using a 10cm Visual Analogue Scale<sup>39</sup> with 0 being very unhappy on the left-hand side of the scale and 10 being very happy on the right-hand side of the scale. Then they were asked to mark on the scale at the point that best described their happiness with respect to their facial appearance.



According to our results, we got an average mean score of 6.43cm, which stated that they aren't very happy with their facial appearance; which correlates to a study done by Hunt et al<sup>67</sup> who also found that the cleft participants with CL/P were significantly less happy with their facial appearance, compared to the participants who did not have CL/P, who got a score of 6.34cm.

**Custom questions:**

Cleft patients were asked a certain set of custom-made questions that had specific answers only. This set of custom questions were asked to know more about the problems faced by the cleft patients.

The first question was related to their major problem and the majority subjects (64.4%) answered speech and few subjects answered chewing, which correlated with

a study done by Noor et al<sup>83</sup> who found that both parents and kids (46.7%) voted that speech was a bigger problem than mastication. Demir et al<sup>65</sup> conducted a study on the psychiatric assessment of children with non-syndromic cleft lip and palate and found that the cleft children (70%) were less satisfied with speech than the children who did not have a cleft or any other psychopathologies with respect to facial deformities.

The second question was related to sharing a feeling with respect to their cleft. A majority of the participants chose family (65.6%) over friends (28.9%) when it came to sharing feelings with respect to their cleft. A study done by Noaret al<sup>84</sup> states that children and young adults with CL/P have fewer friends than non-cleft controls. In another study done by Ramstad et al<sup>52</sup>, they found that the cleft subjects (63%) felt unsure of having close friends and thus felt closer and safer to share feelings with their family and close relatives, which correlates with the present study where the participants felt like sharing more with their family instead of friends.

The third question was related to being treated normally or given more attention. In the current study, the most of the participants (72.2%) voted to be given more attention, which correlates with a study done by Turner et al<sup>85</sup> which stated that the majority of them (59%) desired more attention and counseling time from their clinician and would like to talk more about their emotional issue too.

The fourth question was related if they are satisfied with their orthodontic treatment or not and the majority of participants (83.3%) replied yes, which correlated with a study done by Okayasu et al<sup>34</sup> who had asked the same question with respect to overall orthodontic treatment and an 88.4% people replied definitely yes. And in another study done by Noor et al<sup>83</sup> 75% of parents of cleft participants and 77% of the cleft participants reported being satisfied with the treatment.

The fifth and the last question was related to the first thing they notice about themselves and the majority cleft participants (67.8%) responded as teeth alignment, which correlates with a study done by Okayasu et al<sup>34</sup> who had conducted a questionnaire study on cleft patients (55.7%) whose main reason for considering orthodontic treatment and the thing what they expected most from orthodontic treatment was good tooth alignment. According to a study done by Noor et al<sup>83</sup>, the attributes considered to be most relevant for the patients (84.4%) and their parents (88.4%) were teeth alignment, nose, lips, and speech, in decreasing order of frequency, which also correlates with the findings in the present study.

Anxiety, depression, self-esteem, happiness with respect to facial appearance, and other psychological factors are very broad terminologies that are compounded by various factors. Psychological feelings and emotions being primarily a subjective feeling, a direct quantification of these attributes may not be feasible. This study was carried out to objectively assess some of the factors affecting psychological factors in male and female cleft patients belonging to different age groups.

The entire study was designed to examine the psychology of cleft patients deeply and to take into account and approach physical as well as emotional well-being in a holistic way so that it allows patients to develop as a person and to progress in all dimensions of life in turn.

**Strengths of the study:**

The sample size was adequate. The questionnaire was tested for validity and accuracy. Factors that may impact the anxiety, depression, self-esteem, happiness with respect to facial appearance, and other psychological factors of the cleft patients

undergoing orthodontic treatment were assessed. Since the study encompassed an assessment through various emotional factors during the orthodontic treatment, an assessment of how cleft has affected the psychological profile of the patient. This current study was meant to thoroughly explore the psychology of cleft patients and to take into account and treat physical as well as mental well-being in a holistic way so that it allows patients to develop as a person and to progress in all aspects of life in turn.

**Shortcomings of the study:**

- The current study was cross-sectional in nature and hence individual patient assessment through the whole treatment could not be carried out. A long-term longitudinal assessment should be carried out to reaffirm these findings.
- The findings of this study reflect the responses of patients reporting to the Department of Orthodontics, KAHER's KLE V K Institute of Dental Sciences, Belagavi. Therefore, these results may not reflect the views of orthodontic patients in general.
- The reliability and validity of the study may be subject to bias and errors. Since the study involves assessing subjective parameters like anxiety, depression, self-esteem, happiness with respect to facial appearance, and other psychological factors, individuals in different moods may over or underestimate different parameters from the questionnaire(mood bias). Selection bias may also exist as an individual in an age range of 14-29 years only were studied.

**Future scope of the questionnaire:**

- Multiple strata of the population can be considered so that the psychological impact concerning different cultural groups can be taken into consideration
- A similar study can be undertaken to consider the psychological factors of the parents of cleft individuals undergoing orthodontic treatment.

## CONCLUSION

This study provided a validated and reliable questionnaire

The patients' psychological factors are complex and multifaceted. It involves the interaction of various clinical and non-clinical factors with the thought process of the patient at conscious and subconscious levels.

The analysis of the present study revealed that the psychological factors of cleft lip and palate patients during orthodontic treatment could be broadly divided into:

- **Anxiety:** A large number of patients in the current study appear to have minor anxiety. The factors leading to anxiety are multifactorial like facial appearance, speech, etc and that if not treated at an early stage, might lead to behavioural problems
- **Depression:** The majority of the study participants had a minor risk of depression. The factors leading to depression might be teasing or bullying, self-isolation or declaring themselves as physically ill. Early intervention is necessary to instill positivity in them.
- **Self-esteem:** a majority of the study population had normal self-esteem when compared to individuals who did not have any facial deformities. Having normal or high self-esteem has a positive effect on shaping an individual.
- **Happiness with respect to facial appearance:** cleft patients reported to be not happy with their facial appearance. Thus, expecting better facial plastic surgery or counselling about the realistic outcomes with respect to facial surgery.

- **Major problem:** a majority of the cleft population in the current study reported speech and a few others reported chewing. Having speech problems may affect emotional well being and might have a negative effect on the psychological well being of that individual.
- **Sharing feelings:** A majority of the participants chose family over friends when it came to sharing feelings with respect to their cleft. Cleft patients generally have fewer friends as compared to non-cleft individuals because of different factors perceived by a cleft individual.
- **Attention:** cleft patients voted to be given more attention by the clinician. Giving more attention to cleft individuals during each visitor spending more time for counselling them, can have a positive impact on their minds.
- **Satisfaction with the orthodontic treatment:** almost all of the cleft individuals were satisfied and felt that the clinician was doing a fair orthodontic treatment and felt contented with their treatment.
- **The first thing they notice about themselves:** more than half of the cleft individuals claimed that they notice their teeth alignment first and then their nose. Thus, orthodontic treatment plays a major role in having a good psychological impact on the factor what a cleft individual notices first about themselves.
- Thus, the factors influencing the patient's psychological factors are multiple. The factors may range from concrete factors to subtler factors. Broadly, these can be divided into patient-related factors i.e. age, sex, anxiety, depression, etc. and the doctor related factors i.e. an appreciation of treatment needs of the patient, counselling and so on. Enhancement of the doctor's communication skills i.e. establishing a rapport with the patient and understanding the patient's

requirements, emotional and social support and helping patients cope with psychosocial factors appear to be the key factors in assuring that the patient has a healthy outlook towards themselves.

- Also, during diagnosis and treatment planning procedures, emphasis should be placed over understanding the patient's perception of their own appearance and the problems they face individually. The patients' perceptions and needs must be given priority during the treatment plan formulation. Knowledge of the same helps the clinician to formulate treatment plans which best suit the needs, demands and priorities of the patient. It allows the clinician to generate more personalized treatment plans with higher anticipation of satisfaction at treatment completion. The patients' emotions, feelings, expectations and self-perception of the requirement of the procedure play an important role in obtaining successful results surgically as well as psychologically.

## **SUMMARY**

Patients with a cleft are generally dissatisfied with their physical appearance, especially their faces. Since cleft is usually conspicuous, it affects an individual's body image and has a psychological impact. Orthodontic treatment encompasses not only the correction of physical malocclusions but also the psychological attributes associated with it. So it is a wholesome approach for an individual's upliftment in terms of function, aesthetics and psychological well-being. Hence, this study aimed to assess the various psychological factors of cleft lip/palate patients during orthodontic treatment.

Thus, the current study was undertaken:

- To evaluate their anxiety
- To evaluate their depression
- To evaluate their self-esteem
- To evaluate their happiness with respect to their appearance

The study was a descriptive cross-sectional study on 90 cleft patients reporting to the Department of Orthodontics and Dentofacial Orthopaedics at KLE Academy Of Higher Education and Research, (KAHER) KLE V. K. Institute of Dental Sciences, Belagavi.

The following questionnaire was used:

- Short form of Spielberger State-Trait Anxiety Inventory (STAI)
- Short Four-Item Centre for Epidemiological Studies Depression Scale( CESD)

- Rosenberg self-esteem scale
- Visual analogue scale for happiness with respect to facial appearance
- Custom made self-administered questionnaire

The responses provided by the patient to the questionnaires (annexure IV) were scored as mentioned in the annexure V, VI, VII, VIII, IX. These scores were entered in Microsoft Excel (v. 2013). Descriptive and frequency analysis was performed using the Statistical Package for social sciences software (SPSS).(v 21.0).

Examination of the collected data revealed the following:

- This study provided a validated and reliable questionnaire for the assessment of anxiety, depression, self-esteem, happiness with respect to the facial appearance in cleft patients undergoing orthodontic treatment
- Evaluation of anxiety revealed that the patients have minor anxiety.
- Evaluation of depression revealed that the patients were at minor risk of depression
- Evaluation of self-esteem revealed that the patients had normal self-esteem as compared to non-cleft patients.
- Evaluation of happiness with respect to facial appearance reveals that they were not happy with it
- Evaluation of other factors involved revealed that:
  - The speech was the major problem.
  - They share their feelings with respect to cleft with parents more than friends.
  - They needed more attention to be given by the clinician.
  - They were satisfied with the orthodontic treatment
  - The first thing they note about their faces was alignment of their teeth.

In conclusion, although through clinical and radiographic examination, the orthodontist determines the treatment plan, a patient might emphasize different treatment needs and go through various emotional turmoil, which we as clinicians should be aware of while treating a patient with a cleft. The results of the current study explain the same.

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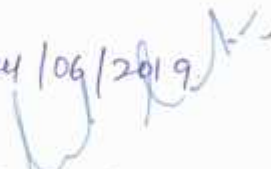

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## ANNEXURE – I

## ETHICAL CLEARANCE LETTER

	<b>Research and Ethics Committee</b> <b>KLE V K INSTITUTE OF DENTAL SCIENCES</b> <b>KLE University</b>	
Accredited 'A' Grade by <b>NAAC</b> Placed in Category 'A' by MHRD (Govt)		
Nehru Nagar, Belagavi - 590 010, Karnataka State		
☎: 0831-2470362 FAX: 0831-2470640	Web: <a href="http://www.kledental-bgm.edu.in">http://www.kledental-bgm.edu.in</a> E-mail: <a href="mailto:principal@kledental-bgm.edu.in">principal@kledental-bgm.edu.in</a>	
		SI. No. : 1229
<div style="border: 1px solid black; padding: 5px; display: inline-block;"><b>CERTIFICATE</b></div>		
<i>This is to Certify that the synopsis titled</i>		
<p><i>Assessment of various psychological factors of cleft lip and/or palate patients measured during orthodontic treatment: A hospital based questionnaire study.</i> Submitted by</p>		
<p><i>Dr. Poojit Rasalkar</i> P. G. Student /</p>		
<p><i>Staff, Guided by Dr. Tejashri Pradhan</i> from Department of</p>		
<p><i>Orthodontics &amp; dentofacial orthopaedics</i> has been critically evaluated by</p>		
<p><i>committee members and granted ethical clearance to conduct the above</i></p>		
<p><i>mentioned study</i></p>		
<p><b>Date :</b> 24/06/2019</p>		
 <b>Member Secretary</b> Research and Ethical Committee KLEVK Institute of Dental Sciences Belagavi	 <b>Chairman</b> Research and Ethical Committee KLEVK Institute of Dental Sciences Belagavi Chairman Research and Ethical Committee KLEVK Institute of Dental Sciences Belagavi	

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**ANNEXURE – II**  
**CONSENT FORM**

**DEPARTMENT OF ORTHODONTICS AND DENTOFACIAL  
ORTHOPAEDICS  
KLE UNIVERSITY'S KLE VK INSTITUTE OF DENTAL SCIENCES,  
BELAGAVI –590010.  
CONSENT FORM**

**“ASSESSMENT OF VARIOUS PSYCHOLOGICAL FACTORS OF CLEFT  
LIP AND/OR PALATE PATIENTS MEASURED DURING ORTHODONTIC  
TREATMENT: A HOSPITAL BASED QUESTIONNAIRE STUDY”**

OPERATOR: DR. POOJIT A RASALKAR

The current study aims to assess the factors affecting the psychology of cleft patients.

The current study is a questionnaire study where patients will be required to only answer the questionnaires.

No investigations or interventions will be conducted on patients.

There are no risks associated with this study.

The data obtained from this study will be used to help patients make the best and correct decision regarding their treatment plan and thus help them make an informed decision.

I, \_\_\_\_\_ aged \_\_\_\_\_ have been informed about my involvement in the study:

1. I agree to give my personal details like name, age, sex, address, and the details required for the study to the best of my knowledge.
2. I permit the dentist to utilize the information given by me and the results obtained from this study for presentation and publication purposes.
3. I will not claim any returns for my cooperation in the study, even if it is being sponsored by any agency. I am participating in my own will and wish.
4. I will follow the instructions given by the doctor.
5. During the study, if I wish to resign from the study, I am free to do so and my treatment will still be completed in the department.

In my full consciousness and presence of mind, after understanding all the procedure in my vernacular language, I am willing and give my consent to participate in this study.

Date:  
Subject's Signature

Place:  
Signature of witness

**ANNEXURE - III**

**PATIENT INFORMATION SHEET**

**K.L.E.V.K.INSTITUTE OF DENTAL SCIENCES, K.A.H.E.R, Belagavi-590010**

**DEPARTMENT OF ORTHODONTICS AND DENTOFACIAL**

**ORTHOPAEDICS**

**PATIENT INFORMATION SHEET**

**Study title:**

**“ASSESSMENT OF VARIOUS PSYCHOLOGICAL FACTORS OF CLEFT LIP AND/OR PALATE PATIENTS MEASURED DURING ORTHODONTIC TREATMENT: A HOSPITAL BASED QUESTIONNAIRE STUDY”**

Name of investigator/Dentist: Dr. Poojit Ashok Rasalkar

- The current study is a cross-sectional questionnaire study and there are **no risks** associated with this study since all that will be done is a questionnaire sheet would be provided with no intervention, no procedure.
- The questionnaire used are-The short form of State-Trait Anxiety Inventory (STAI), The Short Four-Item Center for Epidemiological Studies Depression Scale( CESD), Rosenberg Self-esteem Scale, a visual analogue scale for happiness with respect to facial appearance, and a custom questionnaire set which includes five questions.
- The patient has to tick the answers according to the questions asked.
- Data obtained will be subjected to statistical analysis to assess the psychological factors of cleft patients during orthodontic treatment.

## **ANNEXURE - IV**

### **QUESTIONNAIRE FORMAT AND SCORING PATTERN**

#### **Short form of State-Trait Anxiety Inventory (STAI)**

The short form of the State-Trait Anxiety Inventory (STAI) included the following questions:

1. I feel calm(R)
2. I am tense
3. I feel upset
4. I am relaxed (R)
5. I feel content (R)
6. I am worried

#### Calculation:

<b>Likert scale</b>	<b>Scoring</b>	<b>Reverse scoring</b>
Very much	4	1
Moderately	3	2
somewhat	2	3
Not at all	1	4

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**The Short Four-Item Center for Epidemiological Studies Depression Scale(CESD):**

Below is a list of the ways you might feel or behave. Please check how much you have felt this way during the past week.

1. I am happy (R)
2. I felt like kids were not friendly or they did not want to be with me
3. I felt sad
4. It was hard to get things going

Calculation:

<b>Likert scale</b>	<b>Scoring</b>	<b>Reverse scoring</b>
A lot	3	0
Some	2	1
A little	1	2
Not at all	0	3

**ROSENBERG SELF ESTEEM SCALE**

These were the questions asked in the Rosenberg self-esteem scale:

1. I feel that I am a person of worth, at least on an equal plane with others
2. I feel that I have a number of good qualities
3. All in all, I am inclined to feel that I am a failure (R)
4. I am able to do things as well as most people
5. I feel I do not have much to be proud of (R)

6. I take a positive attitude toward myself
7. On the whole, I am satisfied with myself
8. I wish I could have more respect for myself (R)
9. I certainly feel useless at times (R)
10. At times I think that I am no good at all (R)

Calculation:

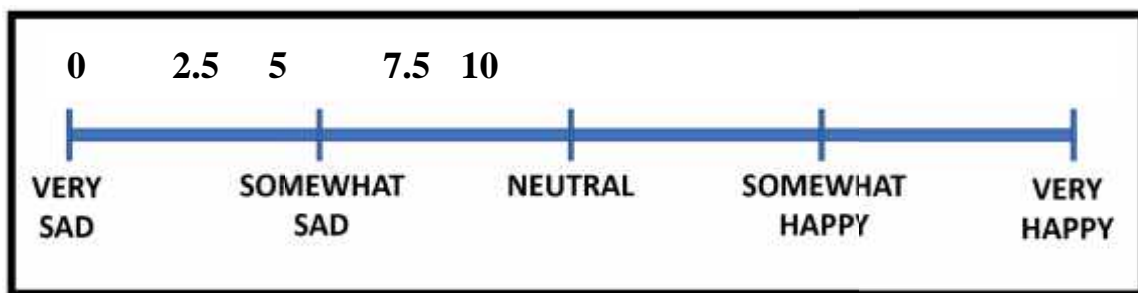
<b>Likert scale</b>	<b>Scoring</b>	<b>Reverse scoring</b>
Strongly agree	3	0
Agree	2	1
Disagree	1	2
Strongly disagree	0	3

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**HAPPINESS WITH RESPECT TO FACIAL APPEARANCE: VISUAL ANALOGUE SCALE**

Participants were asked to be asked to mark on the scale at the point that best described their happiness with respect to their facial appearance.



<b>Likert Scale</b>	<b>Scoring</b>
Very Sad	0
Somewhat Sad	2.5
Neutral	5
Somewhat Happy	7.5
Very Happy	10

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**CUSTOM QUESTIONS**

- What has been your major problem?

<b>Likert scale</b>	<b>Scoring</b>
Chewing	1
Speech	2
Brushing	3
None of the above	4

- Whom do you share feelings with respect to your cleft with?

<b>Likert scale</b>	<b>Scoring</b>
Friends	1
Family	2
Doctors	3
No one	4

- Do you like to be treated normally or given more attention by people?

<b>Likert scale</b>	<b>Scoring</b>
Treated normally	1
Given more attention	2

- Are you satisfied with the treatment?

<b>Likert scale</b>	<b>Scoring</b>
No	1
Yes	2

- What's the first thing you notice about yourself?

<b>Likert scale</b>	<b>Scoring</b>
Nose	1
Lips	2
Teeth alignment	3

ಇನ್ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಅರ್ಥೋಡಾಂಟೋಲಜಿ ಮತ್ತು ಡೆಂಟಲ್ ಸೈನ್ಸಸ್ ಆಫ್ ಇಂಡಿಯಾ

'ಕನಯನವರ್ಸಿಟಿಯ ಕೆಎಲ್‌ಸಿ ಕೆಎನ್‌ಸಿ ಇನ್ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಡೆಂಟಲ್ ಸೈನ್ಸಸ್'

ಬೆಂಗಳೂರು - 590010.

ಒಪ್ಪಿಗೆ ಪತ್ರ

"ವಿವಿಧ ಪದವಿ ಪೂರ್ವಕ ಲ್ಯಾಂಕ್ವೆಂಟ್ಸ್ ಮತ್ತು / ಅಥವಾ ಲೇಔಟ್ ಟೆಂಟ್ಸ್ ಆಫ್ ಅರ್ಥೋಡಾಂಟೋಲಜಿ ಆಫ್ ಇಂಡಿಯಾ ಸಂಸ್ಥೆಯ ಆಧಾರದ ಪ್ರಶ್ನೆಗಳಿಗೆ ಅಧ್ಯಯನ"

ಸಾಕ್ಷಿಯ ಸಹಿ

ಪ್ರಸ್ತುತ ಅಧ್ಯಯನದ ಗುರಿಯು ಸೇವಾ ರೋಗಿಗಳ ಮನೋವಿಜ್ಞಾನದ ಮೂಲಕ ಪರಿಣಾಮವಾಗಿರುವ ಅಂಶಗಳನ್ನು ನಿರ್ಣಯಿಸುವುದು.

ಪ್ರಸ್ತುತ ಅಧ್ಯಯನವು ಪ್ರಶ್ನೆಗಳಿಗೆ ಅಧ್ಯಯನವಾಗಿದೆ,

ರೋಗಿಗಳು ಪ್ರಶ್ನೆಗಳಿಗೆ ಮಾತ್ರ ಉತ್ತರಿಸಲು ಅಗತ್ಯವಿರುತ್ತದೆ. ರೋಗಿಗಳಲ್ಲಿ ಯಾವುದೇ ತನಿಖೆಗಳು ಅಥವಾ ವಾಸ್ತವ ಸ್ಥಿತಿಗಳು ನಡೆಸಲಾಗುವುದಿಲ್ಲ.

ಈ ಅಧ್ಯಯನದೊಂದಿಗೆ ಯಾವುದೇ ಅಪಾಯಗಳಿಲ್ಲ. ಈ ಅಧ್ಯಯನದ ಮೂಲಕ ಪಡೆದ ಡೇಟಾವನ್ನು ರೋಗಿಗಳು ತಮ್ಮ ಚಿಕಿತ್ಸೆಯ ಯೋಜನೆಗೆ ಸಂಬಂಧಿಸಿದಂತೆ ಉತ್ತಮ ಮತ್ತು ಸರಿಯಾದ ನಿರ್ಧಾರವನ್ನು ತೆಗೆದುಕೊಳ್ಳಲು ಸಹಾಯ ಮಾಡುತ್ತದೆ. ನಾನು, \_\_\_\_\_ ವಯಸ್ಸಿನ \_\_\_\_\_

ಅಧ್ಯಯನದಲ್ಲಿ ನನ್ನ ಪಾಲ್ಗೊಳ್ಳುವ ಕಾರಣಗಳಿವು:

1) ನಾನು ನನ್ನ ವೈಯಕ್ತಿಕ ವಿವರಗಳನ್ನು ಹೆಸರು, \_\_\_\_\_ ವಯಸ್ಸು, \_\_\_\_\_ ಲಿಂಗ, ವಿಳಾಸ ಮತ್ತು ವಿವರಗಳಿಗೆ ಅಗತ್ಯವಿರುವ ವಿವರಗಳನ್ನು ನನ್ನ ಜ್ಞಾನಕ್ಕೆ ನೀಡಬೇಕೆಂದು ಒಪ್ಪುತ್ತೇನೆ.

2) ನಾನು ನೀಡಿದ ಮಾಹಿತಿ ಮತ್ತು ಪ್ರಸ್ತುತ ಮತ್ತು ಪ್ರಕಟಣೆಯ ಉದ್ದೇಶಕ್ಕಾಗಿ ಈ ಅಧ್ಯಯನದಿಂದ ಪಡೆದ ಫಲಿತಾಂಶಗಳನ್ನು ಬಳಸಿಕೊಳ್ಳಲು ನಾನು ದಂತವೈದ್ಯಕೀನ ಅನುಮತಿ ನೀಡುತ್ತೇನೆ.

3) ಯಾವುದೇ ವಿಜ್ಞಾನ ಪ್ರಾಯೋಜಿತವನ್ನು ಹೊಂದಿದ್ದರೂ ಸಹ, ಅಧ್ಯಯನದಲ್ಲಿ ನನ್ನ ಸಹಕಾರಕ್ಕಾಗಿ ಯಾವುದೇ ಲಾಭವನ್ನು ನಾನು ಪಡೆದುಕೊಳ್ಳುವುದಿಲ್ಲ.

ನನ್ನ ಸ್ವಂತ ಇಚ್ಛೆ ಮತ್ತು ಇಚ್ಛೆಯಿಂದ ನಾನು ಭಾಗವಹಿಸುತ್ತಿದ್ದೇನೆ.

4) ವೈದ್ಯಕೀನ ನೀಡಿದ ಸೂಚನೆಗಳನ್ನು ನಾನು ಅನುಸರಿಸುತ್ತೇನೆ.

5) ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ, ನಾನು ಅಧ್ಯಯನದಿಂದ ರಾಜೀನಾಮೆ ನೀಡಲು ಬಯಸಿದರೆ, ನಾನು ಹಾಗೆ ಮಾಡಲು ಮುಕ್ತನಾಗಿರುತ್ತೇನೆ ಮತ್ತು ನನ್ನ ಚಿಕಿತ್ಸೆಯು ಇನ್ನೂ ಇಲಾಖೆಯಲ್ಲಿ ಪೂರ್ಣಗೊಳ್ಳುತ್ತದೆ.

ನನ್ನ ಸಂಪೂರ್ಣ ಪ್ರಜ್ಞೆ ಮತ್ತು ಮನಸ್ಸಿನ ಉಪಸ್ಥಿತಿಯಲ್ಲಿ,

ನನ್ನ ದೇಹೀಯ ಭಾಷೆಯಲ್ಲಿ ಎಲ್ಲ ವಿಧಾನಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಂಡ ನಂತರ,

ನಾನು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು ನನ್ನ ಒಪ್ಪಿಗೆಯನ್ನು ನೀಡುತ್ತೇನೆ.

ದಿನಾಂಕ:

ಸ್ಥಳ:

ವಿಷಯದಸಹ

ಸಾಕ್ಷಿಯಸಹ

ಸ್ಟೀಲ್‌ಗರ್ಸ್‌ಪೇಟ್-ಟೈಟ್‌ಆತಂಕಇನ್‌ಟರ (ಎಸ್‌ಐಐ) ಯರಾಜ್ಯದಪ್ರಮಾಣದಸಣ್ಣರೂಪ

ಹಸರು.....

ದಿನಾಂಕ.....

ಜನರುತಮ್ಮನ್ನು ವಿವರಿಸಲುಬಳಸಿದಹಲವಾರುಹೇಳಿಕೆಗಳನ್ನು ಕಳಗನೀಡಲಾಗಿದೆ.

ಪ್ರತೀಕೇಳಿಕೆಮತ್ತುನಂತರಒದಿಈಕ್ಷಣದಲ್ಲಿನೀವುಇದೀಗಹೇಗಭಾವಿಸುತ್ತೀರಿಎಂದುಸೂಚಿಸಲುಹೇಳಿಕೆಯಹ

ಕನ್ನುಸರಿಯಾದಸಂಖ್ಯೆಗವರ್ಗಾಯಿಸಿ.

ಸರಿಯಾದಅಥವಾತಪ್ಪುಉತ್ತರಗಳುಇಲ್ಲ.

ಯಾವುದೇಒಂದುಹೇಳಿಕೆಯಲ್ಲಿಹಚ್ಚುಸಮಯವನ್ನು ಕಳಯಬೇಡಿಆದರಉತ್ತರವನ್ನುನೀಡಿ

ನಿಮ್ಮಪ್ರಸ್ತುತಭಾವನೆಗಳನ್ನುಉತ್ತಮವಾಗಿವಿವರಿಸಲುತೋರುತ್ತದೆ.

1. ನಾನುಶಾಂತವಾಗಿರುತ್ತೇನೆ(R)
2. ನಾನುಉದ್ವಿಗ್ನನಾಗಿದ್ದೇನೆ
3. ನಾನುಅಸಮಾಧಾನಗೊಂಡಿದ್ದೇನೆ
4. ನಾನುವಿಶ್ರಾಂತಪಡೆಯುತ್ತೇನೆ (R)
5. ನಾನುವಿಷಯವನ್ನು ಅನುಭವಿಸುತ್ತೇನೆ(R)
6. ನಾನುಚಿಂತಮಾಡುತ್ತೇನೆ

(R) ಗುರುತಿಸಲಾದಪ್ರಶ್ನೆಗಳನ್ನುಹಮ್ಮುಖಕ್ರಮದಲ್ಲಿಗಳಿಸಬಹುದು.

ಸಕಾರಾತ್ಮಕವಸ್ತುಗಳಿರುವಸ್ಕೋರ್ (\* ಗುರುತು) (ಶಾಂತ, ಶಾಂತವಾದ, ವಿಷಯ) ಆದ್ದರಿಂದ 1 = 4, 2

= 3, 3 = 2 ಮತ್ತು 4 = 1;

ಲಕ್ಷಣ	ಸ್ಕೋರ್	ಉಪಸ್ಕೋರ್
ತುಂಬಾ	4	1
ಮಧ್ಯಮ	3	2

ಸ್ವಲ್ಪಮಟ್ಟಿಗೆ	2	3
ಇಲ್ಲವೇ ಇಲ್ಲ	1	4

ಎಪಿಡಮಿಯೋಲಾಜಿಕಲ್ ಡಿಸೆಸ್‌ಗೆ ಸಣ್ಣನಾಲ್ಕು-ಅಂಶಗಳ ಕೇಂದ್ರಮಕ್ಕಳ ವಿನ್ಯಾಸ ತಯಾರಿಸಿ (ಸಿಇಎಸ್-

ಢ )

ಸಣ್ಣನಾಲ್ಕು-ಐಟಂ ಸಿಇಎಸ್-ಡಿಸಿಯ ವಸ್ತುಗಳು

1. ನಾನು ಖುಷಿಯಿಂದಿದ್ದೇನೆ (R)
2. ಮಕ್ಕಳು ಸ್ನೇಹವಾಗಿ ರಲ್ಲಿ ಅಥವಾ ನನ್ನೊಂದಿಗೆ ಇರಲು ಇಷ್ಟಪಡಲಿಲ್ಲ ಎಂದು ನಾನು ಭಾವಿಸಿದೆ
3. ನಾನು ದುಃಖಿತನಾಗಿದ್ದೆ
4. ವಿಷಯಗಳನ್ನು ಹೋಗುವುದು ಕಷ್ಟವಾಗಿತ್ತು

ಲಿಕೆಟ್ಸ್ ಸ್ಕೇಲ್	ಸ್ಕೋರಿಂಗ್	ರಿವರ್ಸ್ ಸ್ಕೋರಿಂಗ್
ಬಹಳಷ್ಟು	3	0
ಕಲವು	2	1
ಸ್ವಲ್ಪ	1	2
ಎಲ್ಲಲ್ಲ	0	3

ಒಟ್ಟು ವ್ಯಯಿಕ್ತ ಸ್ಕೋರ್‌ನಾಲ್ಕು ವ್ಯಯಿಕ್ತ ಪ್ರಶ್ನೆಗಳ ಸಂಕಲನವಾಗಿತ್ತು.

ರೂಪಾಂತರಗುಣಮಾನದಸೂಚಿ

1. ನಾನುಇತರಜನರಗಮಾನವಾಗುತ್ತೇನೆ
2. ನನಗಕಲವಾರುಉತ್ತಮಗುಣಗಳವೆಂದುನಾನುಭಾವಿಸುತ್ತೇನೆ
3. ನಾನುವ್ಯಭಿಮಾನವೆಂದುಭಾವಿಸುತ್ತೇನೆ \*
4. ನಾನುಹೆಚ್ಚಿನಕಲಸಗಳನ್ನುಮಾಡಲುಸಾಧ್ಯವಾಯಿತು
5. ನಾನುಏನನ್ನಾದರೂಕಷ್ಟದಿಂದಹಮ್ಮಪಡುತ್ತೇನೆ \*
6. ನನ್ನಕಡಗನಾನುಧನಾತ್ಮಕವಾಗಿದೆ
7. ನಾನುನನ್ನಲ್ಲಿತೃಪ್ತಿಹೊಂದಿದ್ದೇನೆ
8. ನಾನುಹೆಚ್ಚುಗೌರವಿಸುವೆಂದುನಾನುಬಯಸುತ್ತೇನೆ \*
9. ನಾನುಕಲವೂಹಮ್ಮಅನುಪಯುಕ್ತಭಾವನೆ \*
10. ಕಲವೂಹಮ್ಮನನಗುಳ್ಳೆಯದುಎಂದುನಾನುಭಾವಿಸುತ್ತೇನೆ \*

ಒಂದು (ಆರ) ನೂಂದಿಗುರುತಿಸಲಾದಬಿಟ್ಟಿಂಗಗಳಿಗ, ಅಂಕವನ್ನುರವಸ್ಥಾಪಿಸಿ (ಉದಾಹರಣೆಗೆ, 0 = 3, 1

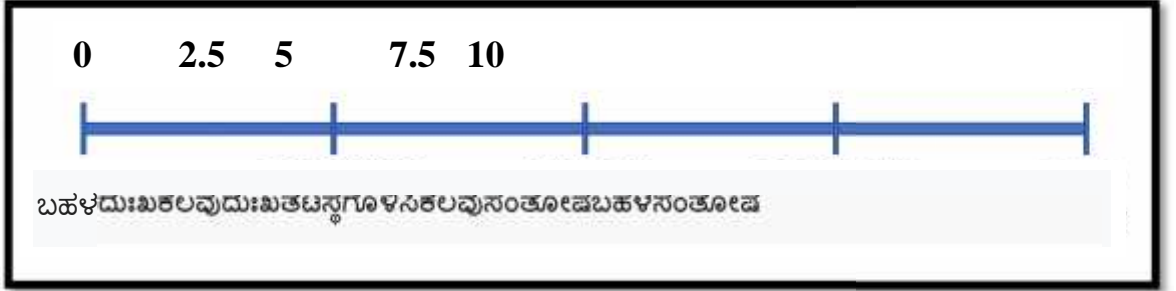
= 2, 2 = 1, 3 = 0). ಒಂದು (ಆರ) ಇಲ್ಲದಅವಸ್ಥೆಗಳನ್ನುಅವರಿಗಮುಂದಿನ, ಕವಲಸೂಚಿಸಲಾಗಿದೆ.

ಲಕ್ಷಣ	ಸೂಚಿ	ಉದಾಹರಣೆ
ಬಲವಾಗಿಬಿಟ್ಟಿಂಗ	3	0
ಬಿಟ್ಟಿಂಗ	2	1
ಅಸಮಾನ	1	2
ಉದಾಹರಣೆ	0	3

ಮುಖದಗೋಚರಸುವಿಕೆಯೊಂದಿಗಸಂತೋಷ: ವಿಷಯಲಾಠನಲಾಗ್ನಲ

ನಿಮ್ಮಮುಖದನೋಟದಿಂದಇಂದುನಿಮಗವಿಷ್ಣುಸಂತೋಷವಾಗಿದ?

ನೀವುಇಂದಿನವರಗನವಿಷ್ಣುಸಂತೋಷವನ್ನುಸೂಚಿಸಲುಕಳಗನಲಂಬವಾದರೇಖೆಯನ್ನುಇರಿಸಿ



ಲಿಟೆರೇಟುರ್	ಸ್ಕೋರಿಂಗ್
ಬಹಳದುಃಖ	0
ಕಲವುದುಃಖ	2.5
ಸ್ಕೋರಿಂಗ್	5
ಕಲವುಸಂತೋಷ	7.5
ಬಹಳಸಂತೋಷ	10

## ಕಸ್ತಮಾಡಿವಪ್ರಶ್ನೆಗಳು:

- ನಿಮ್ಮ ಪ್ರಮುಖ ಸಮಸ್ಯೆಯಾವುದು?

ಲಕ್ಷಣಗಳೆಲಾ	ಸ್ಕೋರಿಂಗ್
ತನ್ನವಲಿಹಾರ	1
ಭಾಷಣ	2
ಹಲ್ಲುಜ್ಜುವುದು	3
ಮಲನಯಾವುದಾಲಲ್ಲ	4

- ನಿಮ್ಮ ಸೇಳುವಿಕೆಗಸಂಬಂಧಿಸಿದಂತನೀವು ಯಾರಭಾವನಗಳನ್ನು ಹಂಚಿಕೊಳ್ಳುತ್ತೀರ ?

ಲಕ್ಷಣಗಳೆಲಾ	ಸ್ಕೋರಿಂಗ್
ಸ್ನೇಹಿತರು	1
ಕುಟುಂಬ	2
ವೈದ್ಯರು	3
ಯಾರೊಇಲ್ಲ	4

- ಸಾಮಾನ್ಯವಾಗಿ ಚಿಕಿತ್ಸನೀಡಬೇಕೆಂದು ಅಥವಾ ಜನರಂದಹಚ್ಚುಗಮನನೀಡಬೇಕೆಂದು ನೀವು ಬಯಸುತ್ತೀರಾ?

ಲಕ್ಷಣಗಳೆಲಾ	ಸ್ಕೋರಿಂಗ್
ಸಾಮಾನ್ಯವಾಗಿ ಚಿಕಿತ್ಸ	1
ಹಚ್ಚುಗಮನನೀಡಲಾಗದ	2

- ನೇವುಚಕತ್ಸಯಿಲ್ಲತ್ಪ್ರಹಾಂದದ್ದೇರಾ?

ಲಿಕ್ಟೆಸ್ಟೇಲ್	ಸ್ಕೂರಂಗ್
ಇಲ್ಲ	1
ಹೌದು	2

- ನಮ್ಮಬಗ್ಗನೇವುಗಮನಿಸದಮೂದಲವಪಯಯಾವು ?

ಲಿಕ್ಟೆಸ್ಟೇಲ್	ಸ್ಕೂರಂಗ್
ಮೂಗು	1
ತುಟಗಲು	2
ಹಲ್ಲುಜೂಡಣ	3

ऑर्थोडॉक्सिक आणि डिफॉन्शियल ऑर्थोपेडिक्स विभाग  
केएलईयुनिव्हर्सिटीकेकेएलव्हीकेइन्स्टिट्यूटऑफ़डेंटलसायन्स,

बेलागावी -5000010

संमतीफॉर्म

"क्लिफ्टलिप आणि /

किवापातालच्यावैद्यकीयउपचारांच्यावेळीअसाधारणउपचारात्मकघटकांचाआकलन:एकहॉ  
स्पिटलआधारितप्रश्नोत्तरीअभ्यास "

ऑपरेटर:

वर्तमानअभ्यासाचाहेतूम्हणजेकलेफरुणांच्यामनोविज्ञानांप्रभावितकरणांघटकांचेमूल्यां  
कनकरणे.

सध्याचाअभ्यासहाप्रश्नावलीअभ्यासआहेजेथेरुणांनाफक्तप्रश्नावलीचाउत्तरदेणेआवश्यकआ  
हे.

रुणांवरकोणतीहीतपासणीकिवाहस्तक्षेपकेलेजाणारनाहीत.

याअभ्यासाशीसंबंधितकोणतेहीधोकानाहीत.

याअभ्यासातूनमिळालेलाडेटाच्याउपचारयोजनेबद्दलसर्वोत्तमआणियोग्यनिर्णयघेण्यासम  
दतकरण्यासाठीवापरलाजाईलआणिअशाप्रकारेत्यांनाएकसूचितनिर्णयघेण्यातमदतहोईल.

मी,

वयाच्या

चाअभ्यासमाझ्यागुंतवणूकीबद्दलकळवलाआहे:

1) मीमाझ्यावैयक्तिकमाहितीजसेकीनाव, वय, लिंग,  
पत्ताआणिअभ्यासासाठीआवश्यकतपशीलांसहमाझ्यामाहितीचेसर्वोत्तमवर्णनकरण्याससहम  
तआहे.

2)

मीदंतवैज्ञानिकांनामाझ्याद्वारेदिलेलीमाहितीआणिसादरीकरणआणिप्रकाशनउद्देशासाठीआ  
भ्यासातूनमिळालेल्यापरिणामांचावापरकरण्यासपरवानगीदेतो

3)

कोणत्याहीसंस्थेद्वारेप्रायोजितकेलेअसलेतरीहीमीअभ्यासातमाझ्यासहकार्यासाठीकोणत्याही  
परताव्याचादावाकरणारनाही.मीमाझ्याइच नुसारआणिइच्छेनेभागघेतआहे.

4) मीडॉक्टरांनीदिलेल्यानिर्देशांचेपालनकरू.

5)

अभ्यासादरम्यान

जरमीअभ्यासातूनराजीनामाद्यायचाअसेलतरमीतसेकरण्यासस्वतंत्रआहेआणिमाझेउपचारअ  
द्यापविभागांतपूर्णकेलेजातील.

माझीसंपूर्णचेतनाआणिमनाचीउपस्थिती,

माझ्यास्थानिकभाषेतीलसर्वप्रक्रियासमजूनघेतल्यानंतर,

मीयाअभ्यासातसहभागीहोण्यासाठीमाझीइच्छाव्यक्तकरतोआणित्यासमान्यतादेतो.

तारीख:

ठिकाण

विषयस्वाक्षरी

साक्षीदारांचीसही

स्पीलबर्गरराज्य-गुणधर्मचिंतायादीच्याराज्यस्केलचेशॉर्ट-फॉर्म

नाव .....

तारीख .....

स्वतः

चीव्याख्याकरण्यासाठीलोककितीविधानेवापरताततेखालीदिलेआहेत.

प्रत्येकवक्त्याचाअभ्यासकराआणिनंतरयाक्षणीआपल्यालाकसेवाटतेहेदशविण्यासाठीविधाना  
च्याउजवीकडेसर्वातयोग्यक्रमांकमंडळा.

कोणतेहीबरोबरकिवाचुकीचेउत्तरनाहीत.

कोणत्याहीएकावक्तव्यावरखूपवेळघालवूनकापरंतुउत्तरद्याआपल्यासध्याच्याभावनांचेवर्णन  
सर्वोत्तमवाटतआहे.

1.मलाशांतवाटतआहे(R)

2.मीतणावआहे

3.मलावाईटवाटते

4.मीआरामदायीआहे(R)

5. मलासामग्रीवाटते(R)

6.मलाकाळजीवाटते

कृपयाखात्रीकराकीआपणसर्वप्रश्नांचीउत्तरेदिलीआहेत

- सकारात्मकआयटम (शांत, आरामशीर, सामग्री) मिळविणेउलटम्हणून 1 = 4, 2 = 3, 3 = 2

आणि 4 = 1;

लिकटस्केल	स्कोअरिंग	उलटस्कोअरिंग
खुप	4	1

थोडक्यात	3	2
थोडीशी	2	3
अजिबातनाही	1	4

### मुलांसाठी एपिडेमियोलॉजिकल स्टडीज डिप्रेझन स्केलचे शॉर्ट फोर-आयटम सेंटर

लहानचार-आयटम सीईएस-डीसीची वस्तू

1. मी आनंदी आहे (R)
2. मुले जसे मैत्रीपूर्ण व्हत्या किंवा मलामाझ्या बरोबर राहायचे नव्हते असे मला वाटले
3. मला दुःखी वाटले
4. गोष्टी मिळविणे कठीण होते

लिकट स्केल	स्कोअरिंग	उलट स्कोअरिंग
बरेच	3	0
काही	2	1
थोडे	1	2
बिलकुल नाही	0	3

एकूण स्कोअर चार वैयक्तिक प्रश्न स्कोअरचा सारांश होता.

### रोजेनबर्गसेल्फइस्टिमस्केल

1. मलाइतरलोकांसारखेवाटते
2. मलावाटतेकीमाझ्याकडेबयोचचांगलेगुणआहेत
3. मलाएकअपयशीवाटतआहे\*
4. मीगोष्टीतसेचबहुतांशगोष्टीकरण्याससक्षमआहे
5. मलाकशाचीहीगर्वनाहीआहे \*
6. मीमाझ्यासाठीसकारात्मकआहे
7. मीस्वतःलासमाधानीआहे
8. माझीइच्छाआहेकीमीस्वतः लाअधिकसन्मानितकरूशकेन \*
9. मलाकाहीवेळाव्यर्थेवाटतआहे \*
10. कधीकधीमलावाटतेकीमीकाहीचचांगलेनाही \*

लिकटस्केल	स्कोअरिंग	उलटस्कोअरिंग
पूर्णपणेसहमत	3	0
सहमत	2	1
असहमत	1	2

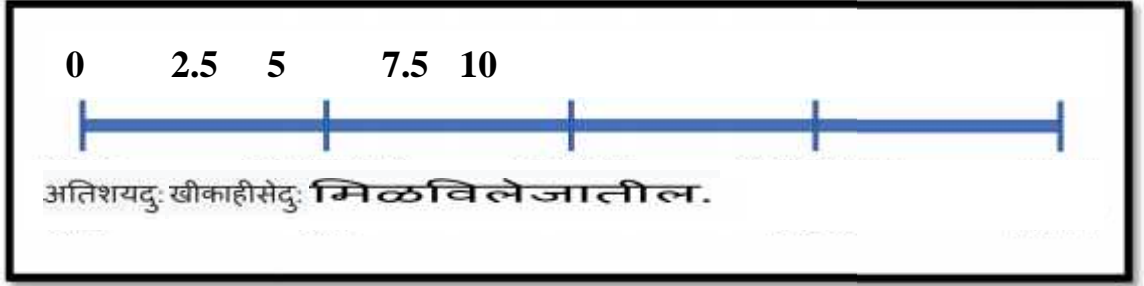
अजिबातमान्यनाही	0	3
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चिन्हांकितप्रश्नउलटक्रमानेमिळविलेजातील.

शारीरिकदृष्टिकोनाबद्दलआदरदाखवल्याबद्दलआनंद: अजिबातमान्यनाही

आपल्याचेहयांचेस्वरूपआजआपल्यासाठीकितीआनंदीआहे?

चिन्हांकितप्रश्नउलटक्रमानेमिळ



लिकर्टस्केल	स्कोअरिंग
अतिशयदुःखी	0
काहीसेदुःखी	2.5
तटस्थ	5
काहीसेआनंद	7.5
अतिशयआनंद	10

### सानुकूलकेलेप्रश्न

- आपलीमुख्यसमस्याकायआहे?

लिकर्टस्केल	स्कोअरिंग
खाणे	1
भाषण	2
दातसाफकरणे	3
उपरोक्तपैकीकोणीहीनाही	4

- आपल्याभावनांबद्दलआपणकोणाचीभावनासामायिककरता?

लिकर्टस्केल	स्कोअरिंग
मित्रांनो	1
कुटुंब	2
डॉक्टर	3
कोणीहीनाही	4

- आपल्यालासामान्यपणेकिवालोकांद्वारेवागवायचेआहे ?

लिकर्टस्केल	स्कोअरिंग
-------------	-----------

सामान्यतःउपचार	1
उच्चलक्ष	2

- आपणउपचारानेसमाधानीआहातका?

लिकर्टस्केल	स्कोअरिंग
नाही	1
हो	2

- आपणआपल्याबद्दललक्षातघेतलेलीपहिलीगोष्टकोणतीआहे?

लिकर्टस्केल	स्कोअरिंग
नाक	1
ओठ	2
दांतक्षय	3

**ANNEXURE – V SHORT FORM OF STATE-TRAIT ANXIETY  
INVENTORY (STAI)**

The short form of the State-Trait Anxiety Inventory (STAI) included the following questions:

1. I feel calm(R)
2. I am tense
3. I feel upset
4. I am relaxed(R)
5. I feel content (R)
6. I am worried

Calculation:

<b>Likert scale</b>	<b>Scoring</b>	<b>Reverse scoring</b>
Very much	4	1
Moderately	3	2
somewhat	2	3
Not at all	1	4

To calculate the total STAI score (range 20 - 80):

- Reverse scoring(R) of the positive items so 1=4, 2=3, 3=2 and 4=1;
- Sum all six scores; multiply the total score by 20/6.

**ANNEXURE - VI**

**THE SHORT FOUR-ITEM CENTER FOR EPIDEMIOLOGICAL  
STUDIES DEPRESSION SCALE (CESD):**

Below is a list of the ways you might feel or behave. Please check how much you have felt this way during the past week.

1. I am happy (R)
2. I felt like kids were not friendly or they did not want to be with me
3. I felt sad
4. It was hard to get things going

Calculation:

<b>Likert scale</b>	<b>Scoring</b>	<b>Reverse scoring</b>
A lot	3	0
Some	2	1
A little	1	2
Not at all	0	3

The total score was the summation of the four individual question scores.

For items marked with an (R), reverse the scoring (for example, 0 = 3, 1 = 2, 2 = 1, 3 = 0).

## ANNEXURE - VII

### ROSENBERG SELF ESTEEM SCALE

These were the questions asked in the Rosenberg self-esteem scale:

1. I feel that I am a person of worth, at least on an equal plane with others
2. I feel that I have a number of good qualities
3. All in all, I am inclined to feel that I am a failure (R)
4. I am able to do things as well as most people
5. I feel I do not have much to be proud of (R)
6. I take a positive attitude toward myself
7. On the whole, I am satisfied with myself
8. I wish I could have more respect for myself (R)
9. I certainly feel useless at times (R)
10. At times I think that I am no good at all (R)

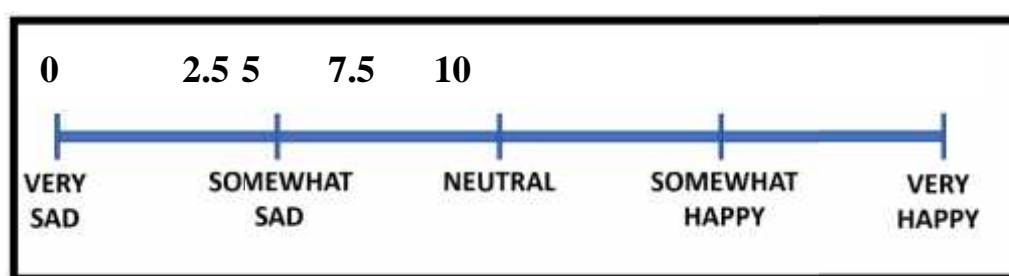
Calculation:

Likert scale	Scoring	Reverse scoring
Strongly agree	3	0
Agree	2	1
Disagree	1	2
Strongly disagree	0	3

For items marked with an (R), reverse the scoring (for example, 0 = 3, 1 = 2, 2 = 1, 3 = 0).

**ANNEXURE – VIII****HAPPINESS WITH RESPECT TO FACIAL APPEARANCE:  
VISUAL ANALOGUE SCALE**

Participants were asked to mark on the scale at the point that best described their happiness with respect to their facial appearance.



Likert Scale	Scoring
Very Sad	0
Somewhat Sad	2.5
Neutral	5
Somewhat Happy	7.5
Very Happy	10

**ANNEXURE – IX****CUSTOM QUESTIONS**

- What has been your major problem?

<b>Likert scale</b>	<b>Scoring</b>
Chewing	1
Speech	2
Brushing	3
None of the above	4

- Whom do you share feelings with respect to your cleft with?

<b>Likert scale</b>	<b>Scoring</b>
Friends	1
Family	2
Doctors	3
No one	4

- Do you like to be treated normally or given more attention by people?

<b>Likert scale</b>	<b>Scoring</b>
Treated normally	1
Given more attention	2

- Are you satisfied with the treatment?

<b>Likert scale</b>	<b>Scoring</b>
No	1
Yes	2

- What's the first thing you notice about yourself?

<b>Likert scale</b>	<b>Scoring</b>
Nose	1
Lips	2
Teeth alignment	3



**ANNEXURE – X - DATA ENTRY**

AGE	SEX	Demographic details	I feel clam	I am tense	I feel upset	I am relaxed	I feel content	I am worried	I am happy	I felt like kids were not friendly or they did not want to be with me	I felt sad	It was hard to get things going	I feel that I'm a person of worth, at least on an equal plane with others	I feel that I have a number of good qualities.	All in all, I am inclined to feel that I am a failure.	I am able to do things as well as most other people.	I feel I do not have much to be proud of	I take a positive attitude toward myself.	On the whole, I am satisfied with myself.	I wish I could have more respect for myself.	I certainly feel useless at times.	At times I think I am no good at all.	What has been your major problem?	Whom do you share feelings with respect to your cleft with?	Do you like to be treated normally or given more attention by people?	Are you satisfied with the treatment ?	What's the first thing you notice about yourself?	How happy are you today with your facial appearance? Pick a number below to indicate how happy you are today
29	M	sawantwadi	(4) not at all	(2) somewhat	(2) somewhat	(3) somewhat	(2) moderately	(2) somewhat	(1) some	(2) some	(1) a little	(1) a little	(3) Strongly agree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(2) Agree	(0) Strongly agree	(2) Disagree	(2) Disagree	speech	friends	treated normally	yes	nose	7.2
22	M	nipani	(3) somewhat	(1) not at all	(3) moderately	(2) moderately	(3) somewhat	(4) very much	(1) some	(0) not at all	(2) some	(3) a lot	(0) Strongly Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(0) Strongly agree	(3) Strongly agree	(3) Strongly agree	(0) Strongly agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6
24	F	hirebagewadi	(3) somewhat	(4) very much	(1) not at all	(2) moderately	(3) somewhat	(4) very much	(1) some	(0) not at all	(2) some	(3) a lot	(1) Disagree	(1) Disagree	(1) Agree	(1) Disagree	(1) Agree	(1) Disagree	(3) Strongly agree	(1) Agree	(1) Agree	(2) Disagree	chewing	family	given more attention	yes	teeth alignment	6.8
22	M	gokak	(3) somewhat	(3) moderately	(3) moderately	(3) somewhat	(4) not at all	(4) very much	(1) some	(0) not at all	(2) some	(3) a lot	(0) Strongly Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(0) Strongly agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	no	lips	8
21	F	yallur	(2) moderately	(3) moderately	(2) somewhat	(2) moderately	(3) somewhat	(3) moderately	(1) some	(0) not at all	(1) a little	(2) some	(3) Strongly agree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(2) Agree	(0) Strongly agree	(1) Agree	(3) Strongly Disagree	speech	family	treated normally	yes	lips	4.6
17	F	daddi	(2) moderately	(2) somewhat	(1) not at all	(3) somewhat	(1) very much	(1) not at all	(3) not at all	(0) not at all	(0) not at all	(1) a little	(1) Disagree	(3) Strongly agree	(3) Strongly Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(0) Strongly agree	(3) Strongly Disagree	(3) Strongly Disagree	none of the above	none of the above	given more attention	yes	lips	5
22	F	hubli	(3) somewhat	(1) not at all	(1) not at all	(3) somewhat	(3) somewhat	(3) moderately	(1) some	(1) a little	(0) not at all	(3) a lot	(0) Strongly Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(3) Strongly agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(3) Strongly Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	6.4
20	M	dharwad	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(3) Strongly Disagree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(3) Strongly Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	5
20	F	daddi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	7.2
21	M	shinoli	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	5.8
19	F	bailhongal	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(1) Disagree	(2) Disagree	(3) Strongly agree	(1) Agree	(1) Disagree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	no	teeth alignment	4
20	M	chikodi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(1) a little	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	no	nose	6.2
24	M	kittur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	friends	given more attention	yes	teeth alignment	5
20	M	kittur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	7.4
23	M	nipani	(3) somewhat	(1) not at all	(1) not at all	(1) very much	(2) moderately	(3) moderately	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	no	teeth alignment	5.6
21	F	hirebagewadi	(2) moderately	(4) very much	(3) moderately	(3) somewhat	(2) moderately	(1) not at all	(2) a little	(1) a little	(2) some	(1) a little	(2) Agree	(2) Agree	(1) Agree	(1) Disagree	(0) Strongly agree	(2) Agree	(1) Disagree	(2) Disagree	(1) Agree	(1) Agree	speech	friends	treated normally	no	lips	4
22	M	yallur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	treated normally	yes	teeth alignment	7
20	F	belgaum	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(4) very much	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6
22	F	shinoli	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(3) moderately	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	6
21	F	daddi	(2) moderately	(2) somewhat	(3) moderately	(3) somewhat	(4) not at all	(4) very much	(3) not at all	(1) a little	(1) a little	(2) some	(2) Agree	(1) Disagree	(3) Strongly Disagree	(2) Agree	(2) Disagree	(2) Agree	(2) Agree	(0) Strongly agree	(3) Strongly Disagree	(2) Disagree	speech	friends	treated normally	yes	lips	6.8
22	F	hattarki	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	5
18	F	hubli	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	6.1
21	M	hirebagewadi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(0) a lot	(0) not at all	(0) not at all	(3) a lot	(0) Strongly Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	friends	given more attention	no	teeth alignment	6
17	F	yallur	(2) moderately	(3) moderately	(2) somewhat	(3) somewhat	(2) moderately	(4) very much	(2) a little	(1) a little	(2) some	(1) a little	(2) Agree	(2) Agree	(1) Agree	(1) Disagree	(3) Strongly Disagree	(1) Disagree	(2) Agree	(0) Strongly agree	(1) Agree	(1) Agree	speech	friends	treated normally	yes	lips	9
22	M	goa	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	7.4
19	M	bailhongal	(3) somewhat	(3) moderately	(1) not at all	(2) moderately	(3) somewhat	(4) very much	(1) some	(0) not at all	(0) not at all	(2) some	(2) Agree	(3) Strongly agree	(2) Disagree	(2) Agree	(2) Disagree	(3) Strongly agree	(2) Agree	(1) Agree	(2) Disagree	(2) Disagree	speech	friends	treated normally	no	lips	6
18	F	nipani	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	5.6
20	F	kittur	(2) moderately	(3) moderately	(2) somewhat	(3) somewhat	(2) moderately	(1) not at all	(2) a little	(1) a little	(1) a little	(2) some	(2) Agree	(1) Disagree	(1) Agree	(1) Disagree	(2) Disagree	(2) Agree	(2) Agree	(0) Strongly agree	(1) Agree	(2) Disagree	none of the above	none of the above	treated normally	yes	lips	7
20	M	daddi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	7.9
16	F	chikodi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(3) moderately	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	4
19	M	hirebagewadi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(3) moderately	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6
21	M	yallur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6.3
18	M	shinoli	(2) moderately	(3) moderately	(3) moderately	(3) somewhat	(1) very much	(4) very much	(3) not at all	(1) a little	(1) a little	(2) some	(2) Agree	(2) Agree	(1) Agree	(1) Disagree	(2) Disagree	(2) Agree	(1) Disagree	(0) Strongly agree	(1) Agree	(2) Disagree	speech	friends	treated normally	no	nose	7
22	M	gokak	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	yes	teeth alignment	5.7
22	F	belgaum	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	none of the above	friends	given more attention	yes	teeth alignment	7
24	M	sawantwadi	(2) moderately	(3) moderately	(2) somewhat	(3) somewhat	(2) moderately	(4) very much	(2) a little	(1) a little	(1) a little	(2) some	(2) Agree	(2) Agree	(1) Agree	(1) Disagree	(3) Strongly Disagree	(2) Agree	(2) Agree	(0) Strongly agree	(3) Strongly Disagree	(1) Agree	speech	friends	treated normally	yes	lips	7
20	M	hattarki	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(2) some	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6.2
18	F	yallur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	7.8
19	F	kittur	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	chewing	family	given more attention	no	teeth alignment	6
20	M	hubli	(2) moderately	(3) moderately	(2) somewhat	(3) somewhat	(4) not at all	(4) very much	(2) a little	(1) a little	(1) a little	(2) some	(2) Agree	(2) Agree	(1) Agree	(1) Disagree	(2) Disagree	(2) Agree	(2) Disagree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	friends	treated normally	yes	lips	7
24	F	nipani	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	8.4
18	M	gadag	(2) moderately	(3) moderately	(3) moderately	(3) somewhat	(2) moderately	(4) very much	(2) a little	(1) a little	(1) a little	(2) some	(2) Agree	(2) Agree	(1) Disagree	(2) Disagree	(1) Disagree	(2) Agree	(0) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	friends	treated normally	yes	lips	7
21	F	daddi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	9
18	M	shinoli	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	none of the above	given more attention	yes	teeth alignment	8
19	F	gokak	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	6.6
25	M	yamakamdradi	(3) somewhat	(1) not at all	(1) not at all	(2) moderately	(3) somewhat	(2) somewhat	(1) some	(0) not at all	(0) not at all	(3) a lot	(1) Disagree	(3) Strongly agree	(2) Disagree	(3) Strongly agree	(1) Agree	(3) Strongly agree	(3) Strongly agree	(1) Agree	(2) Disagree	(3) Strongly Disagree	speech	family	given more attention	yes	teeth alignment	8

