ORIGINAL RESEARCH

Evaluation of Oral and Maxillofacial Surgeons' Knowledge, Experience, and Attitude Regarding Cardiopulmonary Resuscitation in Kerala

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ABSTRACT
Background: Only a limited amount of information is available regarding the frequency of emergencies in dentistry practises and the teams' training in life support. A study was conducted in order to gauge oral and maxillofacial surgeons' proficiency in performing fundamental life-saving techniques in the event of an emergency. **Materials and Methods**: A cross-sectional study was carried out on a consecutive sample of 125 OMFS surgeons, including 58 postgraduate students and 67 MDS employees working in Kerala. An electronic survey was used to gather information about dentists' CPR knowledge and attitudes in light of the 2015 American Heart Association (AHA) guidelines update. Through emails and WhatsApp groups, the survey link was distributed to the targeted surgeons. The statistical software for social sciences (SPSS version 22) was used to analyse the data. Using the Chi-square test, associations between knowledge scores were evaluated. **Results:** Only 69.6% of oral surgeons in the current study possessed the necessary practical training to do CPR, despite the fact that 78% of them had undergone training in it.A correlation was observedbetween the years of work experience and technical knowledge (r = 0.913), Attitude and Knowledge(r =0.401). There was a correlation (r = 0.391) between work experience and attitude. A correlation (r = 0.420) was also observed between age and experience. 27% of the 125 oral surgeons had a negative opinion towards CPR, while 69.5% of them had a good attitude. **Conclusion:** Indian dentists are highly qualified in a number of different dental specializations. To advance dentistry in India and deliver better, safer services to the populace, it is imperative to have a better understanding of medical emergencies.
Keywords: Cardiopulmonary arrest, CardiopulmonaryResuscitation, BLS knowledge

INTRODUCTION

Recently, there has been a lot of discussion on how to manage a patient who is medically impaired. Unfortunately, most of the literature on this subject is western-centric. Although human species and physiology remain unchanged, the challenges in South Asia, particularly India, originate from a significantly different societal structure, a significant urban-rural socioeconomic difference, and sociological factors that have a significant impact on the practise of medicine, Oral and maxillofacial surgeons and general dentists are all required to handle any medical crises that may occur in the course of their practise.In situations of medical crises such as sudden cardiac arrest, drowning, choking, trauma, and other life-threatening situations, basic life support (BLS) is a life-saving technique. The process of chest compressions coupled with rescue breathing is known as cardiopulmonary resuscitation (CPR). The goal of CPR is to sustain a temporary blood flow that will preserve brain function until specialised care is available [1]. The most frequent emergency in dental practise follows the use of medications, most frequently sedatives, analgesics, and local anaesthetics.[2]. The dental office is the place where a drug-related emergency like anaphylactic shock is most likely to happen. One of the top causes of death in almost every country is sudden cardiac arrest (CA)[3]. Cardiac arrest can happen anywhere, even at a dental office. Time is of the importance since treating a cardiac arrest could

have possible poor consequences. The dental team must work together to efficiently activate the "Chain of Survival" during treatment[4]. Dentistry should regularly practise resuscitation procedures, and dentists, especially oral surgeons, should be trained in and prepared to perform CPR.In light of these facts, a study was carried out to evaluate oral and maxillofacial surgeons' understanding of cardiopulmonary resuscitation and how well they use it in their daily practise.

MATERIALS AND METHODS

This cross-sectional study was conducted using Google Forms from January 2023 to March 2023 to evaluate responses using 25 chosen BLS-related questions. A consecutive sample of 125 Oral and Maxillofacial Surgeons from various dental colleges, including 58 postgraduate students and 67 MDS staff took part in the study. A semi-structured online survey was made using Google Forms and adheres to the most recent American Heart Association (AHA)/European resuscitation council (ERC) recommendations from 2015 [5]. Through emails and WhatsApp groups, the survey link was distributed to the targeted surgeons. They had to use the Google Forms to provide their informed consent before they could begin filling out their questionnaire. Participants are automatically directed to study materials after obtaining the link and clicking it. All participants submitted demographic data, including their age, gender, educational background, and number of years practising dentistry, as well as details about how well they understood various BLS components, such as CPR training and attitudes, as well as their knowledge and experience with cardiac arrest and CPR. The validity and degree of repetition of the questions were verified beforehand among a group of 18 oral surgeons (Cronbachalpha = 0.78), and any necessary modifications were made after consulting with an expert in emergency care. The survey's questions were all equally weighted. The final sample count did not include the response forms with incomplete information, and data collecting continued until 125 questionnaires were gathered.

Using the formula below, the right sample size was chosen.

- $n = Z^2P(1-P)/d^2$, where
- n is the sample size
- Z is the statistic corresponding to the level of Confidence (Z=1.96)
- P is expected prevalence
- d is precision

The Ethical Committee's approval and official authorization were obtained prior to the survey's launch.

DATA ANALYSIS

Information transferred from the survey proforma to a computer after the proformas were organised systematically. To analyse the data, a master chart was made in Microsoft Excel (2010). Each affirmative response received a score of "1" for data analysis, whereas each negative response received a score of "0". A total score was produced by adding the individual scores. The IBM Statistical Package for the Social Sciences (SPSS) version 22 was used to enter and analyse the data. Numbers and percentages are used to offer a descriptive analysis. Using the Chi-square test, associations between knowledge scores were evaluated. The correlation between the variables, such as scores of attitude, technical knowledge, age and work experience was examined using the Pearson correlation test. The significance level was established at p⌊ 0.05.

RESULTS

Table 1 shows the distribution of the study participants by age, designation, gender, and experience.

Table 1. Demographic information on the participants (n=125)

Variables		Frequency (n)	Percentage (%)
Gender	Males	77	61.60
	Females	48	38.40
Age	>30 years	42	33.6
	30-50 years	61	48.8
	<50 years	22	17.6
Designation	Postgraduates	58	46.4
	MDS staff	67	53.6
Work Experience	>5 years	50	40
	5-10 years	59	47.2
	<10 years	16	12.8
Practical experience with CPR	Postgraduates	31	53.44
	MDS Staff	45	67.16
Have you taken a BLS course that included CPR training?	Yes	91	69.6
	No	38	30.4

CPR- Cardiopulmonary Resuscitation, BLS- Basic Life Support

48 women and 77 men doing post graduation and working and as oral surgeons made up the study's total participant count of 125. They were then divided into three groups based on the number of years of experience:

>5 Years (50), 5-10 Years (59), and <10 Years (16). Nearly 60.8% of people were found to be familiar with CPR, and 69.6% had received CPR training.

Table 2. Descriptive Statistics on Cardiopulmonary Resuscitation Knowledge (n=125)

Statements	Responses, n(%)		Chi-square	p value
	Correct	Incorrect		
What does BLS stand for?	118 (94.4)	7 (5.6)	10.083	0.021*
BLS procedure in order	110 (88)	15 (12)	5.876	0.004**
When employing BLS during CPR, when should you check for a pulse?	103 (82.4)	22 (17.6)	7.809	0.000**
Compression position in adults for CPR	112 (89.6)	13 (10.4)	5.094	0.009**
Compression depth in adults	118 (94.4)	7 (5.6)	7.603	0.008**
CPR compression position for children	120 (96)	5 (4)	8.963	0.023*
Child compression depth	114 (91.2)	11 (8.8)	6.021	0.004**
CPR compression position for newborns	117 (93.6)	20 (16)	2.096	0.001**
Newborn compression depth	99 (79.2)	8 (6.4)	10.001	0.033*
When you started the dental procedure, the patient had syncope. What action would you take right away?	97 (77.6)	28 (22.4)	9.766	0.012**
What would you do if a patient's airway was blocked during dental procedures as they aspirated a foreign object?	105 (84)	20 (16)	3.186	0.028*
What will be your first line of treatment if you encounter an epileptic fit in the dental chair?	113 (90.4)	12 (9.6)	4.986	0.009**
What steps did you take in response to a patient experiencing cardiac arrest in a dental office?	99 (79.2)	26 (20.8)	6.991	0.006**
What will you do right away if you find out someone is not responding to you despite shaking and shouting at them?	117 (93.6)	8 (6.4)	9.850	0.015*
What maneuver should you employ to open airway?	116 (92.8)	9 (7.2)	8.753	0.006**
What should you do to ensure effective breathing?	95 (76)	30 (24)	4.569	0.031*
What should be the favorable position for patient who is nauseous and vomiting severely?	97 (77.6)	28 (22.4)	5.071	0.062

***P≤0.05(significant), **P≤0.01(highly significant)**

The response percentages to the questions about knowledge of Cardiopulmonary Resuscitation (CPR) are shown in **Table 2**. Majority of the surgeons (89.6%) correctly identified the surface on which to apply cardiac compression. Majority of the surgeons correctly answered the question about the compression depth for adults (94.4%), toddlers (91.2%), and newborns (79.2%). When questioned about the treatment of syncope and airway obstruction, 77.6% and 84% of respondents correctly responded. 90.4% and 79.2% of respondents, respectively, correctly answered questions about how to manage cardiac arrest and epilepsy. When asked how well they could conduct an airway opening maneuver and arrange a better position for a patient with nausea and severe vomiting, 92.8% and 77.6% correctly responded.

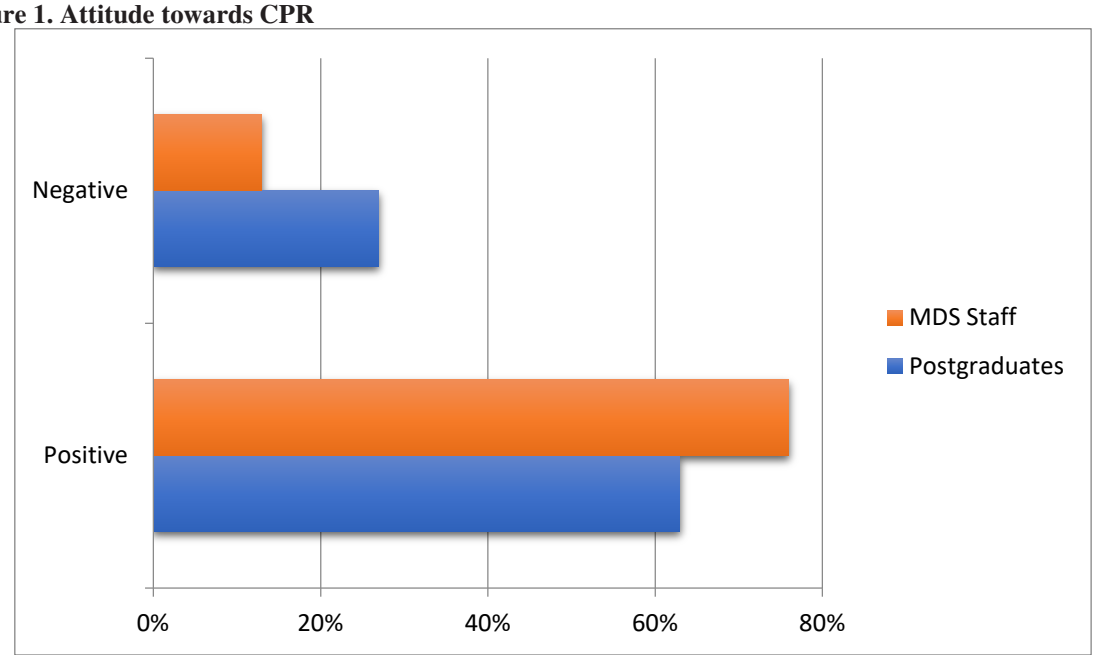
Table 3.Correlation Analysis

Variables	Pearson's correlation	p value
Knowledge and professional experience	0.913	0.006**
Knowledge and Attitude	0.401	0.008**
Years of experience and age	0.420	0.002**
Attitude and professional experience	0.391	0.005**

***P≤0.05(significant), **P≤0.01(highly significant)**

The relationships between age and work experience (years of employment), knowledge and attitude, and high professional experience and attitude are shown in Table 3. There was a high statisticallysignificant correlation between each. Years of work experience and technical expertise were found to be correlated (r = 0.913), as were attitude and knowledge (r = 0.401). Work experience and attitude showed a correlation (r = 0.391). Additionally, age and experience showed a correlation (r = 0.420).

Figure 1. Attitude towards CPR



Of the 125 oral surgeons, 27% of postgraduates and 24% of MDS Staffs (25.5%) had a negative attitude towards CPR, while 63% of postgraduates and 76% of MDS Staffs (a total of 69.5%) had a good attitude. (**Figure 1).**

DISCUSSION

Life-threatening situations can happen at any time or place [6]. Cardiopulmonary arrest (CPA) can happen at any time in a dental chair [7]; however, few studies have shown CPA-related fatalities [8, 9]. Every dental clinic must have a sufficient emergency care plan [10]. A two- to three-fold higher survival rate is seen in patients who are revived right away after going into cardiac arrest [11].Additionally, the survival rate would drop by 7–10% per minute if CPR was not started right away after a cardiac arrest [12].According to our knowledge, this is the first study to be conducted in Kerala to evaluate OMFS surgeons' CPR expertise and knowledge. This study, which was done among Oral and Maxillofacial Surgeons, was driven by the fact that emergencies frequently occur in dental clinics during surgical procedures and extractions. Despite the fact that many dentists claim they have never encountered CPA, failing to adequately prepare for and handle such circumstances can have disastrous and legal repercussions. The current study assessed the personal experience and knowledge of oral and maxillofacial surgeons on CPR. In general, it was discovered that participants had above-average theoretical understanding, but only 60% of them were really able to execute CPR, which is analogous to Singh et al.'s work in 2011 (56%).[13] The current study's findings, on self-evaluation of CPR competence were consistent with those in the literature which showed an average just above 50%[14,15] . In our study, 69.6% of respondents received formal training in CPR, whereas in Iranian and Indian studies, none of the respondents had. [15, 16]. The majority of our participants correctly answered the question about CPR compression depth in adults, children, and neonates, which is similar to the research done by Srinivasan K[17] among dental practitioners and demonstrates better knowledge when compared to the results by Chandrasekaran S[18] et al in India and Irfan B[19] et al in Pakistan. The higher awareness on BLS among the participants when compared to the existing literature may be due to the effective postgraduate training curriculum provided to the oral and maxillofacial surgeons on medical emergency management.Due to the absence of comparable studiesamong OMFS surgeons,comparisons were made on a broad scale.Years of work experience and professional expertise were found to be correlated ($r = 0.913$), as were attitude and knowledge ($r = 0.401$). Work experience and attitude showed -a correlation ($r = 0.391$). Age and experience were shown to be correlated ($r = 0.420$). All of these results are consistent with those of Behroozi H[20] et al, who found that among Radiology Technologists, Age and work experience ($r = 0.866$, $P \leq 0.0001$), Age and technical knowledge ($r = 0.380$, $P \leq 0.0001$), work experience and technical knowledge ($r = 0.317$, $P \leq 0.003$), and attitude and technical knowledge ($r = 0.397$, $P \leq 0.0001$) all showed a correlation.We would want to stress that theoretical knowledge supported by demonstrations but lacking in application is probably insufficient to guarantee CPR proficiency. In contrast to findings by Narayan DPR[21] et al, who found that of the 100 postgraduate students, 52.0% had a favorable attitude and 48.0% had a negative attitude towards BLS, 69.5% of the 125 oral surgeons had a positive attitude and 27% had a negative attitude towards CPR in our current survey. The findings of this investigation agreed with those of research done byRoshana S et al [22]and Mersha AT et al in Ethiopia [23].

Emergency medicine is becoming more widely known, and The Medical Council of India has already recognised it as a distinct speciality [24]. The main duty of this new emergency speciality will be to raise awareness, instruct the medical and paramedical team in the fundamentals of advanced life support, and instruct the public in BLS and first aid [25]. Every member of the community needs to be knowledgeable about basic life support in order to save lives and enhance the level of public health. Future dentists especially oral and maxillofacial surgeons, who frequently deal with life-threatening circumstances, are expected to at least be fully aware of it. Their awareness and knowledge of BLS will be helpful to them.

STUDY LIMITATIONS

There are several limitations on this study. The results' generalizability may be constrained by the limited sample size. Additionally, assessing CPR proficiency solely on the basis of academic knowledge without practical experience is inadequate. It appears that for BLS skills, practical analysis is more accurate than a self-assessment questionnaire.

CLINICAL SIGNIFICANCE

Based on the study's findings, it is clear that continuing education requirements for OMFS surgeons in practise need to be raised, and that the dental office needs to be better organised to address crises of this nature.

CONCLUSION

According to the findings, the majority of participants were aware of how to address medical emergencies in dental practises, and senior surgeons had a higher level of awareness. Dental emergencies are common, even though the majority of them are not life-threatening. Improvements in emergency management proficiency should include regular attendance at life support training, course standardisation, and the provision of courses tailored specifically to dentists' needs. Dentists should brush up on emergency treatment procedures and arm themselves with treatment protocols. Workshops should regularly emphasise cardiac resuscitation techniques.

FUNDING

None.

ETHICAL APPROVAL

Before a respondent filled out the Google Form survey, the study was given the ethical review committee's approval and informed consent was obtained.

CONFLICTS OF INTEREST

There are no conflicts of interest, according to the authors.

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The Role of Nasal Sill Correction in Secondary Cleft Rhinoplasty

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Abstract

Background and Objective- Evaluating outcomes after cleft rhinoplasty can be challenging because of the lack of objective measures that would lead to a more desirable outcome.

Methods - It was a retrospective record based study in which the data of age group between 12 to 21 years was considered for a period of 3 years from 2020 to 2022. The medical records of 35 patients having 90% complete and 10% incomplete unilateral cleft lip who underwent secondary cleft rhinoplasty conducted by single surgeon. Technique variations recorded from the operative reports where incision shape (stair step, v-shaped or closed incision) tip sutures, osteotomy technique, cephalic reduction technique additional excisions like (nasal web lateral vestibule or soft triangle excision) spread and the non spreader cartilage graft crushed nasal dorsum fraft in alloderm, type of septoplasty (extensive versus limited) and history of rhinoplasty.

Results- There were 30 patients who met our inclusion criteria: 10 males (66.7%) and 20 females (66.7%). Of these patients, 26 (86.7%) had a complete cleft lip and 4 (13.3%) had an incomplete cleft lip. The patients' average age at time of surgery was 16.2 years with a mean follow-up of 17.9 months. Subjective scores in both nasal and overall. Of all the objective measures, nasal sill ratio and cleft height to width ratio correlated with improved subjective ratings across multiple time points. It was seen that more than 90% of patients has very good experience in terms of nasal tip complex, symmetry of nose, shape of nose and airway obstruction and it was statistically significant ($p<0.05$).

Conclusions - Nasal sill correction in secondary cleft rhinoplasty is crucial for addressing functional and aesthetic concerns related to cleft lip and palate deformities. The nasal sill is an often overlooked, yet essential, part of creating an aesthetically pleasing nose during cleft rhinoplasty.

Keywords-Nasal sill, rhinoplasty, cleft lip, nasal deformities.

Introduction-

In secondary cleft rhinoplasty, nasal sill correction plays an important role in achieving optimal functional and aesthetic outcomes. The nasal sill refers to the junction between the alar base (the sidewall of the nose) and the upper lip. It is commonly affected in patients with a cleft lip and palate, which can lead to asymmetry, nasal obstruction, and aesthetic concerns.[1] During secondary cleft rhinoplasty, the nasal sill may require correction for several reasons[2]:

Alar base asymmetry: Cleft lip and palate patients often have asymmetry in the nasal sill region, with one side being higher or wider than the other. Nasal sill correction aims to achieve symmetry by adjusting the shape, position, or volume of the alar base.

Alar retraction: Alar retraction is a common complication in cleft lip and palate patients. It refers to the elevation or retraction of the alar base, causing a notched or concave appearance. Nasal sill correction can address this issue by releasing the scar tissue, repositioning the alar base, and restoring a natural contour.

Nasal obstruction: The cleft lip and palate deformity can result in nasal airway obstruction due to abnormal anatomy, such as collapse of the nasal valve area or nasal vestibular stenosis. Nasal sill correction can help improve the nasal airflow by addressing these anatomical issues and widening the nasal passages.

Aesthetic enhancement: Nasal sill correction contributes to the overall aesthetic improvement in secondary cleft rhinoplasty. It helps refine the nasal shape, improve symmetry, and create a more harmonious nasal appearance. By addressing the nasal sill, the surgeon can achieve a balanced and natural-looking nose that complements the patient's facial features.

The specific techniques used for nasal sill correction may vary depending on the individual patient's needs and the surgeon's preferences. Common surgical approaches include alar base repositioning, scar tissue release, cartilage grafting, and soft tissue reconstruction. The surgeon will evaluate the patient's unique anatomy and consider their functional and aesthetic goals to develop a personalized surgical plan.[3,4]

It is essential for patients considering secondary cleft rhinoplasty, including nasal sill correction, to consult with a skilled and experienced plastic surgeon that specializes in cleft lip and palate reconstruction. They will assess the patient's condition, discuss the available options, and recommend the most appropriate approach to achieve the desired outcomes.[5]

Materials and Methods-

It was a retrospective record based study in which the data of age group between 12 to 21 years was considered for a period of 3 years from 2020 to 2022. The medical records of 35 patients having 90% complete and 10% incomplete unilateral cleft lip who underwent secondary cleft rhinoplasty conducted by single surgeon.

Inclusion criteria-

Age group between 12-21 years
Written informed consent

Exclusion criteria-

<12 years and >21 years
Not willing to give consent.

Methodology-

Technique variations recorded from the operative reports where incision shape (stair step, v-shaped or closed incision) tip sutures, osteotomy technique, cephalic reduction technique additional excisions like (nasal web lateral vestibule or soft triangle excision) spread and the non spreader cartilage graft crushed nasal dorsum fraft in alloderm, type of septoplasty (extensive versus limited) and history of rhinoplasty.

Depending on the type and degree of the cleft nose deformity, the surgical procedure varies from patient to patient. When the columella can be advanced using the V transcolumellar incision, open rhinoplasty is frequently performed instead of using a stair-step transcolumellar incision. Through a marginal rim incision or an infra-cartilaginous incision, the lower lateral and upper lateral cartilages are revealed. The septum is exposed to the anterior nasal spine as a result of the separation of the lower lateral cartilages. While a thorough septoplasty involves operations on the bony septum, a limited septoplasty just required sub-mucus excision and caudal septum realignment. The tip defining sutures and tip craft when necessary enabled nasal tip refining. Alar base excisions were performed as appropriate.[6]

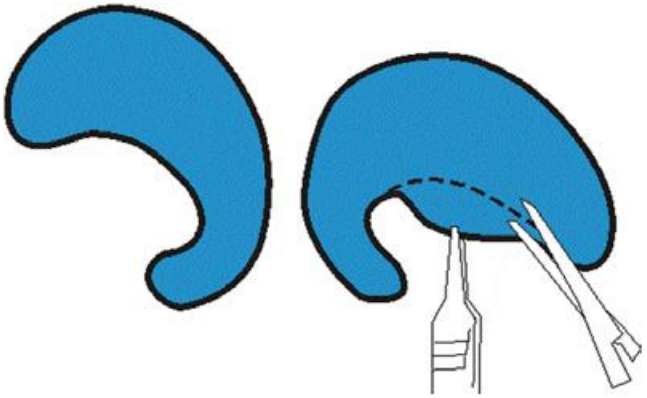

Figure 1- Diagrammatic representation of the noncleft (left) and cleft (right) alar cartilages in a patient with unilateral cleft lip nose deformity. The markings show the technique of semilunar caudal resection of the cleft alar cartilage.

Any residual asymmetries or cartilage sculpturing work was also carried out so as to restore a symmetrical nasal cartilaginous skeleton. Closure was commenced by suturing back the columellar flap. The area of the alar web was now addressed in terms of achieving symmetry by cartilage and skin work. First, the excess caudal border of the cleft lateral crus is excised according to the markings. Next, the amount of excess overlying skin of the web is assessed by in-rolling, and then the extent of horizontal and vertical resections is marked. This skin is then in-rolled after performing adequate resections in both the planes so that the folds in the skin are eliminated. Closure was then completed for the rest of the incision on both the sides. Bolster sutures were used to stabilize the new alar rim in the region of the alar web.[7]

Statistical Analysis-

The statistical analysis was performed using SPSS for windows version 25.0. The findings were present in number and percentage analyzed by frequency, percent. Chi-square test was used to find the association among variables. The critical value of P indicating the probability of significant difference was taken as <0.05 for comparison.

Results-

Table 1- Demographic and Clinical details of subjects

Parameters		**Number (%)**
Gender	Male	15 (45)
	Female	20 (55)
Complete lip		30
Incomplete lip		5
Average age at time of surgery		15.2 years
Follow up time		6.9 months

As per table 1 the study was female preponderance with 55%, males were 45%. 86% subjects had complete lip while 14% had incomplete lip. The age group in the study was 12-21 years. Average age at the time of surgery was 15.2 years and follow up time was 6.9 months.

Table 2- Comparative dimensions of Cleft and Non-cleft alar cartilages

Parameters	**Non-cleft**		**Cleft**		**p-value**
	Medial	Lateral	Medial	Lateral	
Length	17±5	18±3	15±5	18±4	0.11
Width	4±3	11±4	5±3	14±4	0.22
Angle	78±5		68±8		
Nasal sill ratio	1.5		1.8		0.32
Height to width ratio	2.5		2.7		0.10

As per table 2 all the patients underwent external transcolumellar rhinoplasty followed by uncovering of the nasal cartilaginous skeleton. There was increased fibromuscular tissue directly overlying the area of the cleft nasal cartilage. Comparative dimension between cleft and non-cleft alar cartilages were not significant (p>0.05) in any parameters of length and width. Angle of non-cleft was higher than cleft.

Table 3- Comparison between Pre-operative and Post-operative nasal deformities

Parameters	**Pre-operative**	**Post-operative**	**p-value**
Nose length	2.6	2.4	0.01*
Columella height	2.8	2.6	0.01*
Nostril height	9.7	7.2	0.01*
Nostril width	8.2	6.4	0.02*
Nose width	11.5	8.5	0.01*

As per table 3 it was seen that all the parameters are statistically significant (p<0.05) when comparison between pre-operative and post-operative nasal deformities was done. There was a decrease in all parameters in post-operative measurements which was significant.

Table 4- Functional Outcomes of surgery

Outcomes	Poor	Satisfactory	Good	Very good	p-value
Nasal tip complex	1	5	10	19	0.01*
Shape of nose	1	5	9	20	0.01*
Symmetry of nose	2	6	8	19	0.01*
Airway obstruction	1	2	2	30	0.01*

As per table 4 functional outcomes post-operative was evaluated. It was seen that more than 90% of patients has very good experience in terms of nasal tip complex, symmetry of nose, shape of nose and airway obstruction and it was statistically significant ($p<0.05$).

Discussion-

Nasal sill correction in secondary cleft rhinoplasty plays a significant role in addressing both functional and aesthetic concerns associated with cleft lip and palate deformities. The nasal sill, which is the junction between the nostril and upper lip, can be affected by the primary cleft lip repair and subsequent growth and development.[8]

A consistent, frequent, and pervasive secondary nasal malformation is the alar web. The most challenging issue with correcting cleft lip and nose deformities has been recognized is the successfully achieved realignment of the alar cartilage to produce a symmetric nose. This is primarily caused by unilateral cleft lip and nose patients' cleft alar cartilage migrating caudally over the course of growth.

Functional Considerations[9]:

Nasal Airway Obstruction: Cleft lip and palate deformities can result in nasal airway obstruction due to inadequate growth and alignment of the nasal structures. Nasal sill correction aims to improve nasal airflow by addressing any obstruction caused by the nasal sill deformity.
Alar Base Support: The nasal sill provides support to the alar base, which is important for maintaining the proper position and shape of the nostrils. Nasal sill correction helps restore the alar base support, which in turn contributes to improved nasal function.
Aesthetic Considerations:

Nostril Symmetry: Cleft lip and palate deformities can lead to asymmetry and malpositioning of the nostrils. Nasal sill correction techniques can help achieve better symmetry by repositioning and reshaping the nostrils to create a more balanced and aesthetically pleasing appearance.
Nasal Base Width: The nasal sill influences the width of the nasal base. In secondary cleft rhinoplasty, nasal sill correction can address excessive or inadequate width, ensuring a proportional and harmonious nasal appearance.
Scar Revision: Secondary cleft rhinoplasty often involves scar revision, particularly at the nasal sill. Correcting any visible or palpable scars in the nasal sill area can improve the overall aesthetic outcome.

The compressor and dilator nares from the lateral and medial sides exercise differential pull resulting in the overgrowth and prolapse of the alar cartilage into the soft triangle area, an area where the cartilage meets with minimal resistance.[10] Besides the lateral and medial muscular pulls, the alar cartilage is also pulled down by the depressor septi through the septospinal ligament and the medial crus of the alar cartilage. Hypertrophy of the dilator naris anterior has been observed in the present series intraoperatively as evidenced by increased fibromuscular tissue overlying the cleft alar cartilage.[11]

These findings have been corroborated by elaborate cadaver study of Asian noses where the role of dilator naris in controlling alar lobule and shape is described. It is important to note that the specific techniques and approaches for nasal sill correction in secondary cleft rhinoplasty can vary depending on the individual patient's needs and the surgeon's expertise.[12] The choice of surgical techniques may involve procedures such as nasal sill excision, repositioning, or reconstruction using autologous grafts or other materials.[13]

Interesting observations have been made regarding the dimensions of the alar cartilage in secondary unilateral cleft lip nose deformity in the present study. A review of literature did not reveal any comparative report of the dimensions of the alar cartilages in cleft lip nose deformity. The cleft alar cartilage, besides being caudally dislocated, was found to be wider in the area of the lateral crus when compared with the opposite noncleft side.[14] The reason for this hypertrophy seems to be the influence of local muscles and abnormal growth in the area. It has been observed and demonstrated in cadaver noses that the dilator naris muscle originates from the upper lateral cartilage and inserts into the caudal margin of the lateral crus and alar lobule skin.[15] This muscle has been found to be hypertrophied, especially over the cleft alar cartilage in adult unilateral cleft lip nose deformity. This is evident by the fact that intraoperatively there has been a finding of excess of fibromuscular and fatty tissue directly over the surface of the lateral crus.

Conclusion-

In conclusion, nasal sill correction in secondary cleft rhinoplasty is crucial for addressing functional and aesthetic concerns related to cleft lip and palate deformities. By improving nasal airflow, restoring alar base support, and enhancing nostril symmetry and nasal base aesthetics, nasal sill correction contributes to the overall success of the secondary rhinoplasty procedure and the patient's satisfaction with the final outcome.

Conflict of Interest- None declared

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