



# The Effectiveness of Nursing Interventions in Management of Post Operative Complications among Children with Cleft Lip and Cleft Palate

Bharathi ES, Chittoria RK\*, Reddy CL, Koliyath S, Pathan I, Thomas N, Kerakada N, Madhusudhanan K and Nagendra MG

Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry, India

\*Corresponding author: Chittoria RK, Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry, India; Tel: +91-9442285670; Email: [drchittoria \(at\) yahoo \(dot\) com](mailto:drchittoria@yahoo.com)

Received date: 15 January 2021; Accepted date: 24 January 2021; Published date: 28 January 2021

**Citation:** Bharathi ES, Chittoria RK, Reddy CL, Koliyath S, Pathan I, Thomas N, et al. (2021). The Effectiveness of Nursing Interventions in Management of Post Operative Complications among Children with Cleft Lip and Cleft Palate. SunText Rev Surg 2(1): 114.

**DOI:** <https://doi.org/10.51737/2766-4767.2021.014>

**Copyright:** © 2021 Bharathi ES, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Abstract

**Introduction:** Cleft lip and Palate form one of the most commonly presented craniofacial anomalies. Though surgeries for these conditions are commonly performed, they are not without complications. Most complications include bleeding, aspiration, and desaturation and wound dehiscence. If these complications are managed in a timely fashion by the first point of contact, usually the nursing staff, postoperative recuperation of the child becomes easier.

**Aims and objectives:** This study was undertaken to assess the postoperative complications among children with cleft lip and palate and to assess the effectiveness of nursing management in them.

**Materials and methods:** Fifty children who underwent surgery for cleft lip and palate were assessed over a 3 month period. Complications were assessed prior to nursing intervention and were categorized as nil, mild, moderate and severe complications. Nursing intervention was given and the patients reassessed with regard to the complication status.

**Results:** Prior to nursing intervention, 96.0% of the patients had mild complications and 4.0% had moderate complications. After nursing intervention, 92.0% had no complications and 8.0% had mild complications.

**Conclusion:** Our study shows that effective nursing care in the postoperative period can reduce the incidence of complications and ensure a better outcome for patients with cleft lip and palate.

**Keywords:** Nursing intervention; Postoperative complications; Cleft lip and palate

## Introduction

Cleft lip and palate is one of the most common congenital deformities of craniofacial malformation leading to various dental anomalies in early childhood. There is a possibility that a child may suffer from either cleft lip or cleft palate or both simultaneously, at the same time during birth. A cleft lip is an opening or split in the upper lip whereas cleft palate is an opening or split in the roof of the mouth, palate or maxillary bone. A Child with this anomaly not only suffers for poor dental development but is also deprived from breast feeding due to improper oral seal, swallowing and nasal regurgitation. Other associated problems

are hearing difficulties due to abnormalities in the palatal musculature, and speech difficulties due to nasal escape and articulation problems. Stated that of 12,337 live births, 460 still births with cleft lip and palate were reported at JIPMER hospital, Puducherry [1,2]. The prevalence of nursing intervention for prevention of post-operative complication on cleft lip and left palate, and its duration was high followed by therapeutic complications such as, Bleeding, aspiration, Oxygen desaturation, Tachycardia, flap separation, Infection, Pain, Upper respiratory Tract infection, Delayed wound healing, laryngospasm and it could be reduced by therapeutic nursing intervention. This study may help in future for better care on the management of post-

operative complications among children with cleft lip palate surgery.

## Materials and Methods

The study was conducted in the Department of Plastic surgery of a tertiary care center in Puducherry. The objective of the study was to assess the post-operative complications of children who undergo cleft lip and cleft palate surgery, to evaluate the effectiveness of the nursing interventions in management of post-operative complications among children with cleft lip and cleft palate surgery and to associate the effectiveness of the nursing interventions in management of post-operative complications among children with cleft lip and cleft palate surgery with their selected demographic variables. The sample size for this study consists of 50 children with cleft lip and cleft palate surgery. The Children who underwent cleft lip and palate surgery and the children age up to 12 year both male and female children were included in the study. The children assisted by mechanical ventilator and children age above 12 years were excluded from the study. Development of data collection instrument consists of two sections: Section A: This section consist of demographic variables of Age, Sex, Occupation, Income, Religion, Educational qualification, Area of residence, Type of marriage, Gestational age, Antenatal exposure history of mother, Mode of delivery, Birth weight, Color of the baby at birth, Number of birth order, Postnatal history of illness for Mother, Immunization status of the child, Nutritional status of the child, Types of feeding in first 3 options days post-operative days, Types of surgery and Presence of other congenital anomalies. The purpose of the study was explained to each study subject and oral consent was taken. Assurance was given to the study subject that anonymity of each individual would be maintained. Section B: The researcher has developed self-administered questionnaires to assess the post-operative complications of cleft lip and palate. This section consists of twenty five questions which were asked to find out history of the child. Each question has given 4 options such as option (a), options (b), options (c), and options (d). All options of (a) carries score 1, all options of (b) carries score 2 all options of (c) carries score 3, all options of (d) carries score 4 in each questions and the collected data was analyzed descriptive statistics. The question consist of status of the child in post operatively such as General condition, Presence of pus in the wound, Status of body temperature, Level of temperature, Severity of temperature, Presence of edematous on wound site, Level of pain, Flap separation, Oxygen saturation, Status of respiration, Rate of respiration, Retraction for respiration, Presence of cough, Breath sound, Level of respiratory infection, Color of the wound, Status of gum, Status of lip, status of tongue, discharge from the wound, approximation of wound margin, Bleeding, Level of bleeding, status of the child Touches the

wound and Nature of Feeding. The description of the nursing intervention were as follows: 1) Checking vitals 2) Checking spo<sub>2</sub>, 3) Head elevated at 45°, 4) Check for throat pack removal, 5) Use of a soft tipped suctioning gently at the sides of the mouth administration of medication, 6) administration of iv fluids or use of bottle feed and burp frequently, after 15–30 ml of formula has been given. 7) Cleanse the wound by giving 5-15ml of water after each feeding, 8) Position on side after feedings, 9) Assess for tenderness, reddened areas, and lesions or presence of secretions, 10) Cleans suture line with normal saline or sterile water if ordered, 10) Apply the antibiotic cream to suture line as ordered, 11) Use careful hand washing and sterile technique when working with suture line, 12) Use of a cotton swab to apply a half strength peroxide solution, 13) Apply the dressing, 14) Wearing of arm splint The children selected on the first day in the morning with proper oral concern obtained from parents for research purpose by explaining the procedure for gaining trust. Collection of demographic information and pre-test assessment on complication of post-operative of cleft lip and palate surgery. The nursing intervention is administered to the children, which takes about 30 minutes. The intervention was repeated for same children for 7 days. On day seven post-test assessment was recorded after administration of nursing intervention. Postoperative complications that were assessed Bleeding, aspiration, Oxygen desaturation, Tachycardia, Flap separation, Infection, Pain, Upper respiratory Tract infection, and Delayed wound healing.

## Results

Shows Frequency and percentage wise distribution of post-operative complication among children with cleft lip and palate surgery in pre and post-test The findings reveal that out of 50 children, In pre-test none of them are severe complications, 4(8%) are in moderate complications, 46(92%) are in mild complications, and none of them in no complications. In post-test none of them in severe and moderate complications, 9(8%) are in mild complications and 41(82%) are in nil complications (Table 1). Shows Mean, Standard Deviation and mean percentage of post-operative complication among children with cleft lip and palate surgery in pre and post-test. The findings revealed that their mean, standard deviation and mean difference values are 42.020, 11.606 and 9.64 in pre-test. In post-test the mean, standard deviation and mean difference value was 22.380, 5.13 and 6.47215 respectively (Table 2). Shows that the differentiation of post-operative complication of pre-test and post-test among the children mean was 19.64, standard deviation was 13.93, 95% confidence intervals of the difference of lower was 15.93, 95% confidence intervals of the difference of upper was 23.34 (Table 3). On assessment of association of post-operative complication among children with selected demographic variables in post-test, the chi-square test revealed that has statistically significant

association with Age and mode of delivery at  $p < 0.05$  in post-test. There was no significant association between the demographic variables such as gender, occupation, income, religion, area of residence, consanguineously married, gestational age, antenatal history of exposure, birth weight, color of the baby

at birth, number of birth order, post natal history of illness for mother, immunization status of the mother, nutritional status of the mother, types of feeding, types of surgery, presence of other congenital anomalies.

**Table 1:** Frequency and percentage wise distribution of post-operative complication among children with cleft lip and palate surgery in pre and post-test.

S.N O	COMPLICATION	PRE TEST		POST TEST	
		Frequency	Percentage	Frequency	Percentage
1	No Complication	0	0%	41	82%
2	Mild Complication	46	92%	9	8%
3	Moderate Complication	4	8%	0	0%
4	Severe Complication	0	0%	0	0%

**Table 2:** Mean, standard deviation, mean percentage of post-operative complication among children with cleft lip and palate surgery in pre and post-test.

PRE TEST			POST TEST		
Mean	Standard deviation	Effectiveness In mean difference	Mean	Standard deviation	Effectiveness In mean Difference
42.020	11.60663	9.64	22.380	5.13448	6.47215

**Table 3:** Paired t – test of post-operative complications among children with cleft lip and palate in post-test.

Paired Differences				t value	p value
Mean	Std. Deviation	95 % Confidence Interval of the Difference			
		Lower	Upper		
19.64000	13.03020	15.93686	23.34314	10.658*	49

### Discussion

The aim of the present study was to assess the effectiveness of prevention in post-operative complication among children with cleft lip and cleft palate surgery in JIPMER Hospital at Puducherry, The Total number of 50 samples in JIPMER Hospital were selected for this study. Had conducted the study that nursing habits on nutritional need for the children with cleft lip and palate that only 21.4 % of mothers breastfed their babies, 98.25% of mothers used bottled feeding, and suggested that need of a multidisciplinary guidance had conducted study that early intervention for the children with cleft lip and cleft palate ,there was significant decrease in failure to treat and early intervention of feeding has stated that the cleft lip and palate problem need that commitment of multidisciplinary intervention regarding feeding hearing , speech and psychological impairments. The first objective of the study was to assess the post-operative complications of children undergone cleft lip, cleft palate surgery

reveals that the frequency and percentage distribution of post-operative complication. The findings reveals that in pre-test out of 50 children were in 46 (92%) mild complications, 4 (8%) moderate complications, no were in severe complication. In post-test out of 50 children 41 (82%) children were in nil complications, and only 9(18%) children were with mild complications, whereas in pre-test- most of children were with complication [3-6]. Reveals that the present study result shows a marked improvement in the progress of children without occurrence of complication and also that mean, standard deviation, mean percentage of post-operative complications among children in post-test, the finding revealed that the mean and standard deviation values are 42.020 and 11.606 in pre-test, whereas post-test, the mean value is 22.380 with standard deviation value of 5.13 with mean difference of 9.64 and 6.47215 respectively, since the scoring interpretation reveals that the  $< 25$  score indicate mild Level complications, the mean value in post-test reveals mode of children after receiving nursing intervention

reveals no complication. Statistically the result shows that effective nursing intervention and meticulous monitoring will prevent the post-operative complications such as these Bleeding, aspiration, Oxygen desaturation, Tachycardia, Flap separation, Infection, Pain, Upper respiratory Tract infection, and Delayed wound healing, which needs effective nursing care periodic monitoring to reduce the complication among children undergone cleft lip and cleft palate surgery, and also is very essential to prevent the severity of morbidity and mortality among children with congenital anomalies. Hence the hypothesis is a significant difference before and after the nursing intervention in management of post-operative complications among children with cleft lip and cleft palate is accepted at level of  $p < 0001$  which is highly significant. The result was supported by literature Desalu had conducted the study that the cleft lip and cleft palate surgery had a high incidence of airway or respiratory complications, more complications occur cleft lip with cleft palate surgery. There is a need to ensure adequately skilled personal and appropriate monitoring to minimizing morbidity. The second objective of this study was to evaluate the effectiveness of the nursing interventions in management of post-operative complications among children with cleft lip and cleft palate surgery shows that there is significant association between mode of delivery and post-operative complications among children with cleft palate. The researcher viewed that out of 50,38 mothers of cleft lip and cleft palate children undergone normal mode of delivery and the children shows nil complication post operatively. Most of the children were born in normal spontaneous vaginal delivery which may lead to the children well in sustainability of health they may have adequate natural immunity and it may cause to reduce of post-operative complication among children with cleft lip and cleft palate surgery. Thus the hypothesis there is a significant relation between the mode of delivery and occurrence of post-operative complications among the children with cleft lip and cleft palate is accepted at  $p < 0.016$  level. The third objectives of this study was to associate the effectiveness of the nursing

interventions in management of post-operative complications among children with cleft lip and cleft palate surgery with selected demographic variables. That in pre-test, there is a significant association between the age group and occurrence of post-operative complications. The researcher viewed that clinically the cleft lip and cleft palate surgery is advisable before from 18 to 24 months as per criteria for this [1]. Hence children above 24 months are under risk for the occurrence of post-operative complications, In this regard as the age increases the risk complication also increases which is directly associated with each other and viewed to have positive relationship. Thus the hypothesis ,there is a significant relationship between the post-operative complications and age group of the children with cleft lip and cleft palate is accepted at  $p < 0.039$  level.

## References

1. Mathews text book of plastic surgery. 2014.
2. Tindlund RS, Holmefjord A, Eriksson JC, Johnson GE, Vindenes H. Interdisciplinary evaluation of consecutive patients with unilateral cleft lip and palate at age 6, 15, and 25 years: a concurrent standardized procedure and documentation by plastic surgeon; speech and language pathologist; ear, nose, and throat specialist; and orthodontist. *J Craniofac Surg.* 2009; 2: 1687-98.
3. Ibronke D, Lanre AW, Mo A, Adegbenga A. Airway and respiratory complications in children undergoing cleft lip and palate repair. *J Ghana Med.* 2010; 44: 1-5.
4. SILVA Cintia Magali da COSTA Beatriz e NEVES, Lucimara Teixeira das nursing habits in cleft lip and palate children. *RSBO.* 2012; 9; 151-157.
5. Ashby MJ. Feeding therapy and techniques for children with cleft lip/palate. Carbondale Illinois: Southern Illinois Univ Carbondale. 2009.
6. Allam E, Ghoneima A, Kula K. 9 Cleft Lip and Palate the biology of the first days. 2000.