

Awareness and Practice of Mothers regarding Post-Operative Care of their Children with Cleft Lip and Cleft Palate: An Intervention Program

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Abstract

Background: Post-operative care is necessary for good surgical outcomes. It requires vigilance and careful regular observation of the child. Counseling and educating mothers regarding the clefts and the various procedures are one of the most vital aspects of treatment. **Aim:** To evaluate the effect of the intervention program on awareness and practice of mothers regarding post-operative care of their children with cleft lip and cleft palate. **Design:** A quasi- experimental design (Pre & Post) was used. **Setting:** The study was conducted at Pediatric Surgery Department & Outpatient Pediatric Surgery Clinic at Zagazig University Hospital. **Subject:** A convenience sample of 50 mothers and their children with cleft lip and palate at the previous mentioned settings. **Tools:** Two tools were used to collect data. Tool I: Structured Interview Questionnaire. Tool II: Checklists to evaluate mothers' practice. **Results:** Indicated that less than one fifth of studied mothers had satisfactory total awareness score pre-intervention compared to most of them post-intervention. Moreover, less than one quarter of them had satisfactory total practices regarding post-operative care of their children with cleft lip and cleft palate before intervention program compared to most of them post the intervention ($P < 0.01$). **Conclusion:** The present study indicated that the intervention program had great effect on improving mothers' awareness and practice regarding post-operative care of their children with cleft lip and palate. **Recommendation:** The study recommended that providing pediatric nurses with educational booklets, pictures and videos regarding all aspects of care of children with cleft lip and palate in all health care settings to improve outcomes.

Keywords: Post-operative Care, Intervention program, Awareness, Practice, Cleft Lip and Palate Children.

Introduction

A cleft lip and cleft palate are openings in an infant's upper lip or roof of the palate. They're birth defects that form while a fetus grows in the uterus. Cleft lip and palate occur when soft tissue of the upper lip and roof of the mouth don't joint together appropriately through fetal development. Surgery is essential to repair cleft lip and palate (American Dental Association, 2022).

Parents and family are logically ready to see and grasp their newborn and must be ready for the shockwave of seeing the facial defect. Cleft lip and palate are one of the greatest common birth imperfections with a worldwide incidence about 1 in 1,000 live births and is more common in males. Cleft palate occurs in 1 newborn in 2, 500, more often in females. Cleft palate happens with a cleft lip about 50% of the time, most often with bilateral cleft lip (Belleza, 2021).

The reasons of orofacial clefts between most infants are indefinite. Some children have a cleft lip or cleft palate because of changes in

their genes. Cleft lip and palate are believed to be affected by a combination of genes and other factors, such as things the mother derives in connection with environment or what the mother eats or drinks, or assured medications she uses during pregnancy (Centers for Disease Control and Prevention (CDC), 2020).

Cleft lip and/or palate is linked with a diversity of health complications, including speech difficulties, feeding problems, middle ear difficulties, hearing loss, dental abnormalities and related social and psychological problems. Where an isolated cleft lip involves primarily esthetical problems, infants with cleft palate are likewise opposed with imperative functional impairments, particularly velopharyngeal inadequacy with associated feeding, swallowing and speech problems (Frisbee, 2021).

A cleft lip repair may necessitate one or two surgeries. The first surgery usually occurs when the infant is between 3 and 6 months old. This surgery closes the infant's lip. The second

surgery, if essential, is usually performed when the child is 6 months old. As well as utmost surgeries to repair a cleft lip occurs within the 12 months of an infant's life (**Pujol & March, 2021**).

A cleft palate repair is done at 12 months and forms a working palate and decreases the probabilities that fluid will develop in the middle ears. To avoid fluid accumulation in the middle ear, children with cleft palate typically need special tubes placed in the eardrums to relief fluid drainage and their hearing needs checked once a year. In addition, surgery to repair a cleft palate usually occurs within the first 18 months. Some children need extra surgeries to make cosmetic repairs to the areas or fix breathing, hearing, or speech issues (**Patel, 2022**).

The nurse plays vibrant role in caring of children with cleft lip and palate. They had main role such as: Preserve sufficient nutrition, positioning, endorse family coping, lessen family anxiety and provide family teaching. Parents of children born with cleft lip or palate can play an imperative role in helping their child grow normal. So the providing of parent intervention program can be beneficial for aggregate awareness about the child. So, it is compulsory to attain certain skills to resolve the child's problems by parents; of course, the gathering of these skills rises based on parents, especially the mother's awareness and performance enhancement (**Hakim et al., 2021**).

Significance of the study

Cleft lip and palate are craniofacial abnormalities affecting more than 200,000 infants in the United States each year. While this condition is quite communal, parents are often muddled and ignorant when they notice their newborn has a cleft lip and/or palate. In time, parents can learn of the surgical repairs and therapies, but what around the managing, treatment, special effects on education, risk factors, genetics and any other long-term effects on the newborn (**Belleza, 2021**).

Parents of children with cleft lip and palate abnormality experience high levels of disquiet and anxiety due to several stressful factors for example; acute disease conditions, environment,

deficit of surgical equipment and specific diagnostic and therapeutic measures; thus it is necessary to use distinct educational involvements to improve awareness, decrease many psychological strains and improved health management. As well as intervention program is considered a suitable method between others to make an optimum intervention program for mothers. In fact, in this intervention method, mothers can progress in a self- taught manner and enhance knowledge and care of their children. On the other hand, higher relations between people, security sense among parents and lower payments are other benefits of this learning method that led the researchers to choice this method to train the parents among intervention program methods (**Jafari et al., 2017**). So, the present study was to evaluate intervention program about post-operative care to improve awareness and practice of mothers of children with cleft lip and palate.

Aim

To evaluate the effect of the intervention program on awareness and practice of mothers regarding post-operative care of their children with cleft lip and cleft palate.

Objectives

1. To assess mothers' awareness about post-operative care of their children with cleft lip and cleft palate.
2. To evaluate mothers' practice about post-operative care of their children with cleft lip and cleft palate.
3. Design, implement and evaluate intervention program regarding post-operative care among mothers of their children with cleft lip and cleft palate.

Hypothesis

1. The mean post-test awareness score will be significantly higher than mean pre-test awareness score.
2. The mean post-test practice score would be significantly higher than mean pre-test practice score.
3. Intervention program regarding post-operative care enhance awareness and practice among mothers of their children with cleft lip and cleft palate.

Subjects and Methods

The methodology was presented under the following four designs:

1. Technical design.
2. Operational design.
3. Administrative design
4. Statistical design.

I. Technical design:

The technical design of this study included description of the research design, study setting, subjects, sample and tools for data collection.

A. Research design:

A quasi- experimental design (Pre & Post): It is a useful tool in situations where true experiments cannot be used for ethical or practical reasons; was utilized in the present study to evaluate the effect of intervention program on awareness and practice of mothers regarding post-operative care of their children with cleft lip and cleft palate.

B. Setting:

The study was conducted at Pediatric Surgery Department at New surgery hospital & Outpatient Pediatric Surgery Clinic at Zagazig University Hospital.

Pediatric surgery department present at the fourth floor at the new surgery hospital and composed of two rooms each room contains 6 beds. Outpatient pediatric surgery clinic present in the fourth floor at the building of outpatient clinics at Zagazig University hospital. It was available at Saturday & Tuesday/ week.

C-Subjects:

This study was carried out on a convenience sample composed of 50 mothers and their children with cleft lip and cleft palate who fulfilled the following criteria:

- Give direct care to their children with cleft lip and palate.
- Accept to participate in the study.

Sample size:

The sample size calculated based on a study carried out by **Hakim et al., (2021)**. By

estimating an effect size 0.51, based on the mean of parents' care supportive performance at control group mean (SD)= 14.15 ± 4.15 compared with intervention group 27.40 ± 5.86 , $P < 0.001$) and statistical power of 95%, level of confidence (1-Alpha Error): 95%, Alpha 0.05, Beta 0.1. The sample size determines at group is 50 mothers.

D- Tools of data collection:

Two tools were used by the researchers to collect the necessary data.

Tool (I): Structured Interview Questionnaire

A Structured Interview Questionnaire was developed by the researchers after review of the literature and consists of the following six parts:

Part I: Characteristics of the studied mothers such as age, educational level, occupation, residence and number of children in the family.

Part II: Characteristics and medical history of the studied children including their age, sex, birth weight, gestational age, birth place, type of cleft, length of hospital stay and history of another child with disorder.

Part III: Mothers' feeding practices of their children with cleft lip and cleft palate including when initiate breast feeding, exclusive breastfeeding, feeding methods used and source of feeding advice

Part IV: Mothers' awareness about cleft lip and cleft palate, it composed of three main parts:

- A- Mothers' awareness about definition, causes, post- operative complications (pre and post format).
- B- Mothers' awareness about post-operative care provided for their children with **cleft lip** (pre and post format).
- C- Mothers' awareness about post-operative care provided for their children with **cleft palate** (pre and post format).

Scoring system

Each right answer scored 1 point and zero for wrong one. The total score was **30 marks** distributed as follows:

Mothers' awareness about cleft lip and cleft palate	9 marks
Mothers' awareness about post-operative care provided for their their children with cleft lip	9 marks
Mothers' awareness about post-operative care provided for their children with cleft palate	12 marks

The total score of mothers' awareness was classified as follows:

- **Satisfactory > 70%**
- **Unsatisfactory ≤ 70 %**

Tool II: Checklists to evaluate mothers practice

It was composed of two main dimensions: reported practice checklist and clinical checklist.

First: Reported Practice Checklist

Reported practice checklist was designed by the researchers to assess mothers reported practice regarding post-operative care of their children with cleft lip & palate such as immediate care after the surgery, lip & mouth care, feeding instructions, activity after surgery, relief of pain, follow up, problems to report to doctor. As guided by [(Duggan et al (2016)., Redett & Steinberg (2018); Marsy et al (2020), Ramasubbu et al., (2021), Cawthorn et al (2022), Eltayeb et al (2022), Hayes K (2022)].

Scoring system

Each observed items were checked as done or not done. Each correct step was given 1 point and zero was given to not done. The total score of practice was **61 marks** distributed as follows:

Immediate care after the surgery	11 marks
Lip care	8 marks
Mouth care	8 marks
Feeding instructions	14 marks
Activity after surgery	7 marks
Relief of pain	5 marks
Follow up	1 marks
Problems to report to doctor	7 marks

Second: Clinical checklist

Clinical checklist was designed by the researchers to evaluate mothers' practice during lip & mouth care and feeding practice for their children with cleft lip & palate. As guided by [Duggan et al., (2016); Ramasubbu et al (2021)].

Scoring system

Each observed items were checked as done or not done. Each correct step was given 1 point and zero was given to not done. The total score of practice was **25 marks** distributed as follows:

Lip care	8 marks
Mouth care	6 marks
Feeding practice	11 marks

The total score of mothers' practice was classified as follows:

- **Satisfactory > 70%**
- **Unsatisfactory ≤ 70 %**

Intervention Program:

It was developed by the researchers to educate and train mothers about post- operative care for their children with cleft lip and cleft palate.

General objectives of intervention program:

The intervention program aimed to improve mothers ' awareness and practice regarding post- operative care for their children with cleft lip and cleft palate.

Specific objectives of intervention program:

At the end of this intervention program, mothers would be able to

- 1- Identify definition & causes of cleft lip and cleft palate.
- 2- List types of cleft lip and cleft palate.
- 3- Report the complications of cleft lip and cleft palate and its prevention.
- 4- Describe diagnosis and treatment of cleft lip and palate
- 5- Demonstrate how to provide appropriate post-operative care for their children with cleft lip and cleft palate.
- 6- Evaluate the effect of intervention program on awareness and practice of mothers about

post-operative care for their children with cleft lip and cleft palate.

The intervention program was developed through four phases as follows:

(I) Assessment Phase

The intervention program was partially constructed for the assessment of mothers' awareness and practice. The assessment was performed before the implementation of the intervention program by interviewing each mother individually to assess their general awareness and practice (pre-test) by using tool I & tool II after explaining the aim of the study and had their approval to participate in the study.

(II) Planning Phase

Based on the results obtained from the structured interview questionnaire and checklists (from pilot study and assessment phase) as well as reviewing the related literature the intervention program was developed by the researchers. Detected needs, requirements and deficiencies were translated into the aim and objectives of the intervention program in the form of a booklet.

Contents of the intervention program were selected on the basis of identified needs. Various teaching methods were selected to suit teaching individually in a form of lectures, group discussion, role play, demonstration, storytelling and reinforcement. Teaching media were prepared as handout (booklet), colored posters, as well as educational videos that covered theoretical and practical information.

(III) Implementation Phase

The intervention program of this study was implemented through three sessions in which each mother was interviewed separately to facilitate the learning process. The length of each session differed according to the content and mothers' responses. It was ranged from 30 – 45 minutes. Sessions were explained in simple Arabic language that suits the level of studied mothers understanding. Motivation and reinforcement during each session were used to enhance mothers' active participation and foster learning.

The intervention program was in forms of (face-to-face and displaying educational videos). The mothers were first face-to-face

explained about the primary notes and then displayed educational videos that covered theoretical and practical information.

Session I:

The first session in the intervention program involved an acquaintance between researchers and mothers and brief explanations about intervention program aim, numbers of sessions, meeting time, program rules, expected outcomes and benefits of intervention program participation.

Session II:

The second session involved information about definition, causes, types, complications, diagnosis as well as treatment and post-operative care of cleft lip and cleft palate.

Session III:

In the third session, the researchers educate and trains studied mothers about post-operative care provided for their children with cleft lip and palate.

(IV) Evaluation Phase

- In this phase every mother was re-interviewed individually after 48 hours of surgery and re-assessed (post-test) by re-answering the questionnaires (using tool I) and assessed practice (using tool II).
- At the end of the training sessions (after post-test), the booklet / handout was delivered to studied mothers.
- This study was carried out in 8 months from the beginning of August 2021 to the end of March 2022.

II- Operational design

The operational design included the study validity and reliability, pilot study and fieldwork.

A- Validity and reliability

The structured interview questionnaire, checklists were developed after a thorough review of the related literature and then reviewed by 5 professors (two professors of pediatric nursing, two professors of pediatric surgery, one professor of pediatric medicine). All jury members (100%) were agreed that current study tools and its validity relevant to the aim of the study. The reliability of tools was tested by using of Cronbach's alpha test. Reliability coefficient was good for awareness (Cronbach's $\alpha = 0.804$) & good for practice (Cronbach's $\alpha = 0.827$).

B- Ethical consideration

The agreement for participation of subjects was taken after the explanation the aim of the study. They were given opportunity to refuse to participate, they were notified that they could withdraw at any stage of the research; also they were assured that information would be confidential and used for research purpose only.

C- Pilot study

A pilot study was carried out in 5 mothers (10 % of mothers) to test the clarity and applicability of the tools, as well as to estimate the time needed for filling the data. According to this pilot study, the required modifications were made. Those mothers who were involved in the pilot study were included in the study.

D- Field work

After identifying the subjects who fulfilled the criteria of the study, the researchers started with explained the aim and process of the study briefly and obtained oral consent from every mother. The researchers also, determined the place of meeting and timetable. They were met by the researchers at the morning shift from 9.00 a.m. to 2.00 p.m. The researchers attended the study settings 4 days /week (Sunday & Wednesday) at pediatric surgery department and (Saturday & Tuesday) at outpatient pediatric surgery clinic at Zagazig University hospital for data collection and implementation (post- test) was done 48 hours of surgery.

III. Administrative Design.

To carry out the study in the selected settings, an official permission was obtained from the directors of the previously mentioned settings.

IV- Statistical Analysis

The collected data was coded and entered into IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, NY, USA). The data was then reviewed to detect any entry errors. It was then analyzed by the same program to create frequency tables with percentages. Qualitative data was presented as a number and a percent, and quantitative data was described as mean or standard deviation. Qualitative categorical variables were compared using chi-square test. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. Chi-square is a statistical test used to examine

the differences between categorical variables. Linear regression attempts to model the relationship between two variables by fitting a linear equation to observed data. **The results were considered statistically significant at $P \leq 0.05$.**

Result:

Table (1) illustrated characteristics of studied mothers, it was found that 54% were in age group 31 to 35 years old with mean age 30.16 (4.87) years. As well as, 38%, 36% had bachelor and secondary education respectively. In addition, 58%, 54% were housewives and lived in rural areas respectively. Besides, 72% had 1-2 children and 18% had consanguinity.

Table (2) revealed characteristics and medical history of studied children. It clarified that 36% were in age group 21 to 30 months with mean age 15.21 (2.30) months. In addition, 56% were females. Regarding their birth weight, nearly 62% were 2.5 kg or more. As well, 58% were full term and 72% was born in a hospital. Furthermore, 34% had another child with this disorder. Additionally, 8%, 10% suffered from other anomaly and suffered from other disease respectively. Moreover, 66% stayed in the hospital for 3-4 days post operation.

Table (3) indicated feeding practices among studied mothers; it reflected that 62%, 64% didn't initiate breastfeeding early and didn't breastfed currently, respectively. As well, 44% used bottle feeding. In addition, 24% heard about specialized feeding bottle. Besides, hospital is the source of information among 30% of studied mothers. Also, 36% received advice about breast feeding and source of it among 44.4% was the nurses.

Table (4) indicated that there was a marked improvement in all caring children items among the studied mothers at posttest compared to pre-test with a highly statistically significant difference ($P < 0.01$). As evidence, 20% have satisfactory awareness about care post cleft palate operation at pretest compared to 88% at posttest. Moreover, 18% had satisfactory total awareness about caring children at pre-test compared to 86% of them at posttest.

Table (5) displayed that there was improvement in postoperative care among studied mothers as regard lip care and feeding practice at posttest compared to pre-test. As evidence, 18%, 16% cleaned gently with a

cotton bud dipped in cooled boiled water and did gentle massage to the scar once the wound had healed at pre-test compared to 90%, 86% at posttest, respectively. 14% made burping child because he swallowed more air while feeding at pre-test compared to 90% of them at posttest.

Table (6) portrayed that there was improvement in postoperative care among the studied mothers as regard mouth care at posttest compared to pre-test. As evidence, 20%, 24% cleaned the child's teeth and gums, used a gauze pad dipped in plain water or a small amount of alcohol-free mouthwash mixed with water and didn't use a toothbrush in the child's mouth for 3 weeks at pre-test compared to 90%, 92% of them at posttest, respectively.

Table (7) indicated that there was a marked improvement in total clinical practice related post-operative care among the studied mothers at posttest compared to pre-test with a highly statistically significant difference ($P < 0.01$). As evidence, 14% had satisfactory total practice at pre-test compared to 90% of them at posttest.

Table (8) clarified that there was a marked improvement in total reported practice related postoperative care among the studied mothers at posttest compared to pre-test with a highly statistically significant difference ($P < 0.01$). As evidence, 24%, 22%, 20% had satisfactory total reported practice as regard immediate care after

the surgery, activity after surgery and follow-up at pretest compared to 88%, 90% respectively at posttest. Additionally, 22% had satisfactory total reported practice at pretest compared to 86% of them at posttest.

Table (9) shows that there was a highly significant statistical positive correlation between the total awareness, total practice and total reported practice of studied mothers at post-intervention with ($p < 0.01$).

Table (10) reflected that education level, another child with this disorder (yes) and Hospital stays post operation (3-4 days) of the studied mothers had high frequency positive effect on mothers' awareness post intervention at p value= 0.007, 0.004 and 0.005, respectively. In addition, age, employment and Place of delivery (hospital) had slight frequency positive effect on mothers' awareness post intervention at p value= 0.014, 0.012 and 0.032, respectively.

Table (11) represented that Another child with this disorder (yes) and Hospital stays post operation (3-4 days) of the studied mothers had high frequency positive effect on mothers' practice post intervention at p value= 0.005 and 0.007, respectively. Moreover, education level, employment and Place of delivery (hospital) had slight frequency positive effect on mothers' practice post intervention at p value= 0.034, 0.041 and 0.028, respectively.

Table (1): Characteristics of Studied Mothers (n=50)

Characteristics	n	%
Age (years):		
20 - < 26	12	24
26- < 31	11	22
31-35	27	54
Mean SD	30.16 (4.87)	
Education level		
Not read and write	4	8
Primary	9	18
Secondary	18	36
Bachelor	19	38
Occupation:		
Employee	21	42
Housewife	29	58
Residence:		
Rural	27	54
Urban	23	46
Number of children		
1-2	36	72
3-4	14	28
Consanguinity:		
Yes	9	18
No	41	82

Table (2): Characteristics and Medical History of Studied Children (n=50)

Characteristics	n	%
Age (months)		
1-10	17	34
11-20	15	30
21-30	18	36
Mean SD	15.21 (2.30)	
Gender		
Male	22	44
Female	28	56
Birth Weight:		
<2.5 kg	19	38
2.5 kg or more	31	62
Gestational age:		
Premature	21	42
Full-term	29	58
Place of delivery		
Hospital	36	72
Home	14	28
Another child with this disorder		
Yes	17	34
No	33	66
Suffered from any other anomaly		
Yes	4	8
No	46	92
Suffered from other disease		
Yes	5	10
No	45	90
Hospital stay post operation		
1-2 days	17	34
3-4 days	33	66

Table (3): Feeding Practices among Studied Mothers (n=50)

Feeding Practices	N	%
Early initiation of breast feeding		
One hour	0	0
24 hours	8	16
Days	11	22
Never	31	62
Currently breast feeding		
Yes	18	36
No	32	64
Exclusive breast feeding:		
Yes	17	34
No	33	66
Feeding method: *		
Breast feeding	13	26
Bottle feeding	22	44
Spoon feeding	5	10
Medicine dropper	6	12
Syringe	9	18
Ryle	2	4
Hearing about specialized feeding bottle:		
Yes	12	24
No	38	76
Source of information		
Hospitals	15	30
Others	35	70
Receiving advice about breast feeding		
Yes	18	36
No	32	64
If yes, source of it (n=18)		
Nurses	8	44.4
Physician	5	27.8
Relatives	5	27.8

* More than one answer

Table (4): Mothers' Awareness about care provided for their Cleft Lip and Palate Children (n=50)

Mothers' Awareness	Pretest	Posttest	Chi-square
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	N	%	N	%	P value
Awareness about cleft lip and palate:					
Satisfactory	8	16	39	78	9.562
Unsatisfactory	42	84	11	22	<0.01**
Awareness about breast feeding:					
Satisfactory	9	18	40	80	10.333
Unsatisfactory	41	82	10	20	<0.01**
Awareness about care post cleft lip operation:					
Satisfactory	7	14	41	82	8.901
Unsatisfactory	43	86	9	18	<0.01**
Awareness about care post cleft palate operation:					
Satisfactory	10	20	44	88	10.275
Unsatisfactory	40	80	6	12	<0.01**
Total awareness:					
Satisfactory	9	18	43	86	12.500
Unsatisfactory	41	82	7	14	<0.01**

** P value is statistically significant at <0.001

Table (5): Post-operative Care of Cleft Lip and Palate among Studied Mothers (n=50)

Post-operative Care	Pretest				Posttest			
	Done		Not done		Done		Not done	
Lip Care	N	%	N	%	N	%	N	%
1. Wash hands	20	40	30	60	43	86	7	14
2. Prepare necessary equipment	13	26	37	74	44	88	6	12
3. Wear clean gloves	7	14	43	86	42	84	8	16
4. Gentle cleansing with a cotton bud dipped in cooled boiled water	9	18	41	82	45	90	5	10
5. Apply an ointment to prevent drying out of the wound.	10	20	40	80	42	84	8	16
6. Allow any dried blood or crusty material to fall off on its own.	12	24	38	76	44	88	6	12
7. Gently massaging the scar once the wound has healed.	8	16	42	84	43	86	7	14
8. Avoid direct trauma	11	22	39	78	40	80	10	20
Feeding Instructions								
1. Wash hands	14	28	36	72	41	82	9	19
2. Wear clean gloves	6	12	44	88	42	84	8	16
3. Allow breastfeeding, bottle-feedings, or cup-feedings after surgery according doctor order.	11	22	39	78	43	86	7	14
4. Place your baby in an upright, sitting position to lessen the amount of milk coming through the nose	9	18	41	82	44	88	6	12
5. Keep the bottle tilted so the nipple is always filled with milk and pointed down away from the cleft.	10	20	40	80	42	84	8	16
6. Burp child because they take in more air while feeding	7	14	43	86	45	90	5	10
7. Should not use a straw or pacifier, as both could damage the surgical repair.	9	18	41	82	44	88	6	12
8. Do not allow the spoon to touch the roof of the mouth.	15	30	35	70	40	80	10	20
9. Do not allow your child to chew on anything	11	22	39	78	43	86	7	14
10. Do not give any hot food or hot fluids.	10	20	40	80	41	82	9	18
11. Note feeding plans	3	6	47	94	40	80	10	20

Table (6): Distribution of Studied Mothers according to Post- operative Care (n=50)

Mouth Care	Pretest				Posttest			
	Done		Not done		Done		Not done	
	N	%	N	%	N	%	N	%
1. Wash hands	8	16	42	84	44	88	6	12
2. Wear clean gloves	6	12	44	88	43	86	7	14
3. To clean your child's teeth and gums, use a gauze pad dipped in plain water or a small amount of alcohol-free mouthwash mixed with water.	10	20	40	80	45	90	5	10
4. Wipe the front of the teeth only.	9	18	41	82	42	84	8	16
5. Do not use a toothbrush in your child's mouth for 3 weeks.	12	24	38	76	46	92	4	8
6. Allow child to drink water after eating to keep the mouth clean	9	18	41	82	40	80	10	20

Table (7): Total Clinical Practice of Studied Mothers related Post-operative Care (n=50)

Total Clinical Practice	Pretest		Posttest		Chi-square P value
	N	%	N	%	
Lip Care:					
Satisfactory	7	14	44	88	14.556 <0.01**
Unsatisfactory	43	86	6	12	
Feeding Instructions:					
Satisfactory	9	18	42	84	13.450 <0.01**
Unsatisfactory	41	82	8	16	
Mouth Care:					
Satisfactory	6	12	43	86	13.776 <0.01**
Unsatisfactory	44	88	7	14	
Total Practice:					
Satisfactory	7	14	45	90	15.612 <0.01**
Unsatisfactory	43	86	5	10	

** P value is statistically significant at <0.001

Table (8): Total Reported Practice of Studied Mothers related Post-operative Care (n=50)

Total Reported Practice	Pretest		Posttest		Chi-square P value
	N	%	N	%	
Immediate care after the surgery					
Satisfactory	12	24	44	88	9.876 <0.01**
Unsatisfactory	38	76	6	12	
Lip & mouth care					
Satisfactory	10	20	43	86	10.221 <0.01**
Unsatisfactory	40	80	7	14	
Feeding instructions					
Satisfactory	9	18	42	84	9.222 <0.01**
Unsatisfactory	41	82	8	16	
Activity after surgery					
Satisfactory	11	22	44	88	8.901 <0.01**
Unsatisfactory	39	78	6	12	
Relief of pain					
Satisfactory	8	16	41	82	10.045 <0.01**
Unsatisfactory	42	84	9	18	
Follow-up					
Satisfactory	10	20	45	90	8.712 <0.01**
Unsatisfactory	40	80	5	10	
Problems to Report to Doctor					
Satisfactory	8	16	40	80	11.342 <0.01**
Unsatisfactory	42	84	10	20	
Total reported practice					
Satisfactory	11	22	43	86	12.366 <0.01**
Unsatisfactory	39	78	7	14	

** P value is statistically significant at <0.001

Table (9): Correlation between Studied Variables post Intervention

		Total awareness	Total practice	Total reported practice
Total awareness	r.		0.654	0.710
	p.		<0.01**	<0.01**
Total practice	r.			0.699
	p.			<0.01**
Total reported practice	r.			
	p.			

** P value is statistically significant at <0.001

Table (10): Multiple Linear Regression Model for Mothers' Awareness post Intervention (n=50).

		Unstandardized Coefficients	standardized Coefficients	T	P. value
		B	B		
Age		.199	.118	3.462	.014*
Education level (High)		.319	.236	5.670	.007**
Employment (employee)		.201	.139	3.786	.012*
Place of delivery (hospital)		.276	.190	2.664	.032*
Another child with this disorder (yes)		.399	.246	6.107	.004**
Hospital stays post operation (3-4 days)		.312	.228	5.908	.005**
Model	R ²	Df.	F	P. value	
Regression	0.65	5	13.888	.000**	

a. Dependent Variable: **Mothers' awareness**

b. Predictors: (constant): Age, Education level (High), Employment (employee), Place of delivery (hospital), another child with this disorder (yes), and hospital stays post operation (3-4 days)

Table (11): Multiple Linear Regression Model for Mothers' Practice post Intervention (n=50).

		Unstandardized Coefficients	standardized Coefficients	T	P. value
		B	B		
Education level (High)		.234	.165	2.692	.034*
Employment (employee)		.189	.076	2.100	.041*
Place of delivery (hospital)		.201	.121	2.835	.028*
Another child with this disorder (yes)		.327	.219	5.314	.005**
Hospital stays post operation (3-4 days)		.289	.201	4.789	.007**
Model	R ²	Df.	F	P. value	
Regression	0.59	4	11.464	.000**	

a. Dependent Variable: **Mothers' practice post intervention**

b. Predictors: (constant): Education level (High), Employment (employee), Place of delivery (hospital), another child with this disorder (yes), and Hospital stays post operation (3-4 days).

Discussion

Cleft lip and palate are one of the most common birth defects with a global incidence of 1 in 700 live births. They result from failure in the fusion of facial processes that take place between the 4th and 12th gestational week. They require surgical treatment in the early years of life. Timing of repair is aimed at preventing further speech abnormalities and minimizing distortion in facial growth which can occur if repair is done too early. Surgery may be delayed to optimize the associated abnormalities as far as possible (Martinez et al., 2022).

Post-operative care of the cleft lip and palate is an essential and crucial part of care which plays an important role in the recovery of children. In the phase of post-operative care, most of children are cared by their mothers so the education of mothers regarding the care is an essential part for good surgical outcomes (Elekiaby et al., 2021).

Concerning characteristics of studied mothers, it was found that more than half of studied mothers were in the age group 31-35 years; more than one third of them had bachelor and secondary education. Such result contrasts with (Attia et al., 2020) who demonstrated in his study about "Mothers of Children with an Orofacial Cleft: Nursing Support and Stress" that the majority of mothers were 30 years age or less, with illiterate education.

The current study revealed that more than half of studied children were females and more than one third were in the age group between 21 to 30 months. This result disagrees with (Swamy & Santhosh, 2018) who studied "Nutritional Status of Children with Cleft Lip, Cleft Palate and Awareness of their Mothers at Health Care Centers" and found that most of children were boys and were in the age range of 0- 15 years.

Among the mothers who received feeding advices, nearly two thirds of studied mothers

initiate breast feeding early and didn't use exclusive breastfeeding. This is may be due to feeding cleft lip and palate children is known to be difficult and mothers were facing feeding difficulties that related to reduced sucking efficiency, nasal regurgitation and excessive air intake. Such result is supported with **(Adekunle., et al., 2020)** who carried out "Breast feeding Practices Among Mothers of Children with Orofacial Clefts in an African Cohort" and mentioned that initiation of breastfeeding was reported by the majority of the mothers, and only 18.5% of this proportion continued exclusive breastfeeding.

Moreover, the present study revealed that more than two fifth used bottle feeding and almost one quarter heard about specialized feeding bottle. This is may be reflected that mothers don't have enough information regarding feeding techniques used for cleft lip and palate children and only one quarter of them had heard about the existence of specialized cleft feeding bottle. In addition, health care providers don't offer enough information regarding the feeding techniques. Such result disagrees with **(Nabatanzi et al., 2019)** who studied "Feeding Practices of Children Aged 0 to 24 Months with Clefts Attending a Specialized Hospital in Uganda" and reported that most of mothers used bottles, cups and spoons in feeding their children. Majority preferred the specialized soft bottle.

It is clear from the current study that more than one third of studied mothers received advice about breast feeding and source of advice more than two fifth was the nurses. This is may be attributed to nurses have high awareness and skills in transmitting information. Through education, mothers will improve their children health and improve their quality of life. This finding goes in harmony with **(Eltayeb et al., 2022)** who studied "Mothers' Struggle and Awareness towards Feeding a Child with a Cleft Lip and Palate" and found that half of the mothers received their feeding information from nurses.

The result of the present study clarified that the majority of the studied mothers had unsatisfactory level of awareness about breast feeding practices before intervention program that reduced to one fifth post instructions. This

improvement can be attributed to the intervention program in which the mothers were trained. This finding goes in harmony with **(Murthy et al., 2020)** who carried out a study about "Assisted breastfeeding technique to improve awareness, attitude and practices of mothers with cleft lip- and palate-affected and mentioned that there was significant improvement in the awareness of the mothers regarding breast feeding practices.

The current study demonstrated that less than one fifth of studied mothers had satisfactory total awareness about post-operative care of children at pretest compared to most of them at posttest. This result may be related to the effect of the intervention program in refreshing and improving mothers' awareness. Nearly the same finding is reached by **(Hakim et al., 2021)** who studied "the effect of combined education on the awareness and care and supportive performance of parents with children with cleft lip and palate" and found that after education the intervention group, the mean score of parents' care and supportive awareness significantly increased.

The present study showed that only less than one quarter of studied mothers clean their child's teeth and gums, use a gauze pad dipped in plain at pretest compared to most of them at posttest. This is may be due to mothers were afraid to touch the surgical site and had limited awareness. Such result is inconsistent with **(Swamy & Santhosh, 2018)** who reported that majority of the caregivers practicing good oral hygiene and agreed that rinsing children's mouth is important.

The current study showed that age, educational level had positive effect on mothers' awareness post intervention. Such result may be due to the education plays an important role in providing care to children from parents especially mothers. This study contrasts with **(Ekata et al., 2017)** who conducted entitled "Effectiveness of Structured Teaching Program (STP) on Awareness and Practice of Post-Operative Care among Parents of Children with Cleft Lip and Cleft Palate" and found that that there was no significant association between pre-test awareness score and age, education status of caregiver.

The present study indicated that there was a marked improvement in total clinical practice related postoperative care of studied children at posttest compared to pretest. Such result may be related to improve mothers' practice after implementing the intervention program sessions especially after displaying educational video films. This finding goes in harmony with (Johansson & Ringsberg, 2020) who mentioned in a study about "Parents' Experiences on Having a Child with Cleft Lip and Palate" that the birth of a baby with scarring on face caused first parents' poor performance due to their limited awareness.

It is clear from the current study that there was a marked improvement in total reported practice related postoperative care among the studied mothers at posttest compared to pretest. This result may be reflected that the intervention program had significant positive effect on mothers' practice regarding postoperative care of their cleft lip and palate children. Such finding goes in line with (Ekata et al., 2017) who found that there was an improvement in practice of parents after structured teaching program.

Conclusion

The present study concluded that mothers had unsatisfactory level of awareness and practice regarding post-operative care of their children with cleft lip and palate. The intervention program had great effect on improving mothers' awareness and practice regarding post-operative care of their children with cleft lip and cleft palate.

Recommendation

1. Providing pediatric nurses with educational booklets, pictures and videos regarding all aspects of care of children with cleft lip and palate in all health care settings to improve outcomes.
2. Continuous training and education to increase awareness and performance of mothers of children with cleft lip and palate.
3. Caregivers of children with cleft lip and palate will require support from society, health professionals, friends and relatives. Therefore, designing a coping strategy for families of children with cleft lip and palate.
4. A comparative study to find the effectiveness of teaching programs and

other teaching strategies like video teaching or role play. .

5. Evaluate the effect of educational programs about proper pre and post-operative care on growth and development of children with cleft lip and palate.

References

- Adekunle A A , Adamson O , James O , Ogunlewe O M , Butali A and Adeyemo W L (2020): "Breastfeeding Practices Among Mothers of Children with Orofacial Clefts in an African Cohort". *The Cleft Palate-Craniofacial Journal*. 57.(8): 1018-1023.
- American Dental Association (2022): Cleft Lip and Cleft Palate. Available at: <https://www.mouthhealthy.org/en/az-topics/c/cleft-lip-palate>. Accessed on [April 5, 2022].
- Attia A M, Elkazaz R H and El-Monshed A H (2020): Mothers of children with an orofacial cleft: nursing support and stress. *International Journal of Novel Research in Healthcare and Nursing*, 7 (1): 959-964.
- Belleza A M (2021): Cleft Lip and Cleft Palate Available at: <https://nurseslabs.com/cleft-lip-cleft-palate/>. Accessed on [May 25, 2022].
- Cawthorn T R, Todd A R , Hardcastle N, Spencer AO, Harrop A R and Fraulin F O (2022): Optimizing Outcomes After Cleft Palate Repair: Design and Implementation of a Perioperative Clinical Care Pathway. *Cleft Palate Craniofac J*; 59(5):561-567. doi: 10. 1177/ 10 5 5 6 6 5 6 2 1 1017409.
- Centers for Disease Control and Prevention(CDC) (2020): Facts about Cleft Lip and Cleft Palate Available at: <https://www.cdc.gov/ncbddd/birthdefects/cleftlip.html>. Accessed on [February 12, 2022].
- Duggan L, Sheridan M and Durkan A (2016): guidelines on the pre & post operative management of children with cleft lip & palate and palatal speech surgery. Available at: [cleft-lip-and-palate-and-palatal-speech-surgery-pre-post-operative-management-aug-2016.pdf](https://www.olchc.ie/files/2016/08/cleft-lip-and-palate-and-palatal-speech-surgery-pre-post-operative-management-aug-2016.pdf) (olchc.ie). Accessed on [February 24, 2022].
- Ekata, Sorte D Y and Chanu S E (2017): Effectiveness of Structured Teaching Program (STP) on Awareness and Practice

- of Post-Operative Care among Parents of Children with Cleft Lip and Cleft Palate. *Pediatr Ther.* 7. (2): 2-7. doi:10.4172/2161-0665.1000321.
- Elekiaby M, Gobran T, Rozik A, Mansy W and Elekiaby O (2021):** Postoperative Parents' Satisfaction in Cases of Simple Unilateral Cleft Lip Repaired by Millard's Procedure. *Egyptian Journal of Hospital Medicine.* 84: 2542-2547.
- Eltayeb A, Satti A and Babiker H E (2022):** Mothers' Struggle and Awareness towards Feeding a Child with a Cleft Lip and Palate. *Acta Scientific Dental Sciences,* 6 (1): 61-67.
- Frisbee E (2021): Cleft Lip and Cleft Palate.** Available at: <https://www.webmd.com/oral-health/cleft-lip-cleft-palate>. Accessed on [May 25, 2022].
- Hakim A, Zakizadeh Z, Saki N, and Haghighizadeh M H (2021):** The effect of combined education on the awareness and care and supportive performance of parents with children with cleft lip and palate: A clinical trial study. *Global Pediatric Health,* 8. doi: 10. 1177/ 2333794 X 211022238.
- Hakim A, Zakizadeh Z, Saki N and Haghighizadeh M (2021):** The effect of combined education on the awareness and care and supportive performance of parents with children with cleft lip and palate: A clinical trial study. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8361544/>. Accessed on [May 22, 2022].
- Hayes K (2022):** How to Care for Your Child after Cleft Lip Repair. Available at: How to Care for Your Child After Cleft Lip Repair (verywellhealth.com). Accessed on [March 20, 2022].
- Jafari A, Zarea K, Mehregan N (2017):** The prevalence of Cleft lip and cleft palate and related risk factors among Iranian children from 2000 to 2016: a literature review. *Int. J. Pediatr;* 5(4):4687-4697.
- Johansson B and Ringsberg K C (2020):** (2020): Parents' Experiences on Having a Child with Cleft Lip and Palate. *Journal of Advanced Nursing.* 47(2):165-73. Doi: 10.1111/j.1365-2648.2004.03075.x.
- Martinez A F, Batista N T, Bom G C, Matiole C R, Zamboni C S and Trettene A S (2022):** Palato-plasty in children: nursing diagnoses and interventions related to the immediate postoperative period. *Journal of school of nursing.* 56. 1-8. Available at: <https://doi.org/10.1590/1980-220X-20210252>.
- Murthy P S, Deshmukh S and Murthy S (2020):** Assisted breastfeeding technique to improve awareness, attitude and practices of mothers with cleft lip- and palate-affected infants: A randomized trial, *Spec Care Dentist;* 40(3):273-279. DOI: 10.1111/ scd. 12464.
- Nabatanzi M, Seruwagi G K, Tushemerirwe F B and Lubogo D (2019):** Feeding practices of children aged 0 to 24 months with clefts attending a specialized hospital in Uganda , 6-16. DOI: <https://doi.org/10.21203/rs.2.16333/v>.
- Patel P (2022):** Cleft Palate Repair. Available at: <https://emedicine.medscape.com/article/1279283-overview>. Accessed on [February 10, 2022].
- Pujol G and March A (2021):** Cleft Lip Repair. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK564326/>. Accessed on [January 18, 2022].
- Ramasubbu S, Gaur S, Wahab A, Marimuthu M (2021):** postoperative management of cleft lip and palate surgery- a review. *ijbpas,* 2021, 10(3): 774-784. DOI: 10.5772/intechopen.8988.
- Redett R and Steinberg J (2018):** Cleft Lip Repair Post-Operative Instructions. Available at: [cleft-lip-discharge.pdf\(hopkinsmedicine.org\)](http://cleft-lip-discharge.pdf(hopkinsmedicine.org)). Accessed on [January 12, 2022].
- Swamy A S and Santhosh G (2018):** Nutritional Status of Children with Cleft Lip, Cleft Palate and Awareness of their Mothers at Health Care Centres. *International Journal of Health Sciences and Research.* www.ijhsr.org ISSN: 2249-9571 Original Research Article.