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Original Article

Effect of Implementing Cleft Lip and Cleft Palate Guidance Protocol on Mothers' Feeding Practices

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ABSTRACT

ABSTRACT Congenital defects of the maxillofacial region include cleft lip and cleft palate. Malnutrition is among the biggest obstacles faced by people with cleft lip and palate. **Aim:** The aim of the study was to evaluate the effect of implementing cleft lip and cleft palate guidance protocol on mothers' feeding practices. **Method**: A quasi-experimental design was used. The study was conducted in the pediatric surgical department and pediatric surgical outpatient clinic at Mansoura University Children's Hospital affiliated to Mansoura University. A purposive sample of 27 infants with cleft lip and cleft palate and their mothers who were admitted through 2 months during the period from the beginning of March to the end of April, 2022. Two tools were used; first tool: A structured interview questionnaire (Characteristics of mothers, characteristics of infants, Infants' Feeding criteria as reported by mothers, mothers' knowledge about cleft lip & cleft palate); second tool: an observational checklist for mothers' feeding practice. **Results:** Eighty-one percent of mothers lack adequate knowledge of pre-feeding protocol compared to only about one-fifth of them after feeding, and seventy percent of mothers lack proficiency in pre-artificial feeding protocol compared to only twenty percent of them after feeding guidance—a statistically significant difference. **Conclusion and Recommendations:** This study concluded that implementation of the cleft lip and cleft palate guidance protocol had a positive effect on mothers' feeding practices. Further research should be conducted to help mothers overcome feeding problems in infants with cleft lip and palate.

Keywords: *Cleft Lip, Cleft Palate Guidance Protocol*

Introduction

The term cleft lip and palate (CL/CP) refers to abnormalities of the upper lip and palate that develop over time or are present at birth. Cleft lip and palate can occur separately or simultaneously. Both abnormalities are caused by either insufficient fusion of the hard or soft palate (common at 8-9 weeks of gestation) or a fragmented combination of the genital lips (usually at 35 days of gestation). From the 6th to 9th week of pregnancy, the palate develops. A cleft palate, an opening of the palate, occurs when the tissues that make up the palate do not fuse completely during pregnancy. Some newborns open their anterior and posterior palates, while others have only a partial palate opening **(Shkoukani, Chen, & Vong, 2013; Hockenberry & Wilson, 2015; Kenner, Altimier, & Boykova, 2019).** It is unclear why these clefts form, but doctors believe that both environmental and genetic factors play a role **(Groen et al., (2023)** Worldwide, Orofacial clefts impact about 1 in 600–700. The prevalence of oral and facial clefts varies with race, nation, and socioeconomic class, with one case occurring every 500–550 births **(Seifeldin, 2016; Fitzsimons et al., 2021)**

Cleft lip and palate affect children and their families. Eating, speaking, and hearing difficulties are examples of direct impacts. Bullying, teasing, and social exclusion are examples of indirect consequences **(Wehby et al., 2014; Dardani et al., 2020).** The following components of care, such dental caries, still require improvement even if strong evidence exists that centralization has advanced **(Ness et al., 2018).** The psychosocial status of children with CL/CP becomes a critical component of assessing overall management success as care extends into adulthood and beyond **(Acum, Mastroyannopoulou, O'Curry, & Young, 2020).** Although these structural anomalies can be medically corrected (where medical care is available), certain negative effects, such as speech impediment, aesthetic issues, and poor mental health, may last until adulthood. remains connected

to successful outcomes (**Feragen, Sarvold, Aukner, & Stock, 2017).**

Mothers must be fully informed about infants who have CLP. They need help seeing their kids as a whole rather than just focusing on their outward faults as they grieve the loss of their anticipated and ideal child **(Ball, Bindler, Cowen, & Shaw, 2012).** In order to successfully breastfeed their children, mothers will need to understand how to do so. They will also probably need some helpful methods and extra breastfeeding practices **(Nasar, Amer, & Aly, 2018).** Since nurses make up more than 70% of the medical staff. They have more contact with children and their families. One of the main duties of nurses and one of their most important tasks in the provision of medical treatment is to educate children and their parents. Nurses should provide mothers with the necessary training, especially in nutrition, so that they can care for their children at home before surgery. She also encourages mothers to start breastfeeding as early as possible to foster an emotional bond between mother and child **(Arvalho et al., 2021).** Pediatric nurses should improve maternal knowledge, Inform them of the value of contacting the craniofacial team for follow-up to promote child health and communicate regularly with all mothers of children with CLP. Nurses need to respond to and address nutritional issues. They need to discuss the assessment of growth. Problems and abnormalities related to the growth and development of infants, prevention, early detection, and various treatment methods of CL/CP (**Nasar et al., 2018).**

It is stressed that during the preoperative, postoperative, and follow-up phases supportive care is provided to address physical, informational, practical, emotional, spiritual, and psychosocial needs. As nurses work closely with the medical staff, the category of information needs has a direct connection to the advice given to mothers. By educating mothers with the knowledge they need to participate in childcare and giving them the freedom to choose their child's treatment options, nurses work as partners with mothers. Professional collaborations help mothers feel in charge of the situation, maintain their optimism, and create plans that will directly help their infants become wholesome community members in the future. **(Madhoun et al. al., 2020).** Mothers need to be informed about the treatment plans and different specialists required to enable them to engage in care within the allotted period, just as they need to be informed about the shortcomings of their infants. providing mothers with both oral and written information about the difficulties their infants might encounter and the potential effects of their progress as they get older. Mothers should use this format when there are no healthcare providers available. **(Khanjari, Oskouie, Eshaghian Dorche, & Hagani, 2013).** Therefore, in order to solve the problem of infants with CLP, it is necessary to acquire certain skills. These skills come from improving the knowledge and practices of parents, especially mothers **(Faghihi & Kajbaf, 2017).** Research results show that childhood illness impacts family lifestyles, and parents feel responsible for their child's illness, fear, anxiety, and guilt, which can ultimately affect overall family performance **(Khanjarie et al., 2013).**

Significant of the Study

Both developed and developing nations continue to experience serious health issues with oral and facial clefts. In developed countries, 1-2 out of every 1000 births result in cleft lip (CL) and cleft palate (CP). Males are more likely to have CL than females are, while females are more likely to have CP without CL. **(Oginni & Adenekan., 2012; Watkins, Meyer, Strauss, & Aylsworth, 2014).** In a study on Breastfeeding Protocols for Mothers of Infants with Cleft Palate" conducted in Egypt; mothers of cleft infants faced many difficulties and problems in feeding their infants and found that they were not able to properly breastfeed their infants and the need for precise breastfeeding. It also recommended promoting knowledge and practices of feeding techniques and implementing continuing education programs for mothers of infants with CLP **(Nasar et al., 2018).** Nurse on the CLP team develop a close relationship between the infant and the mother to provide the best possible support to the family. Nutrition consultation begins at birth in obstetrics and after cleft lip surgery in newborns. This information is important for a mother to feel confident about having her CLP/CP child. **(Lewis, Jacob, & Lehmann, 2017; Madhoun, Merrell, Smith, Snow, & Cherosky, 2020).** So, this study emerged to evaluate the effect of implementing CL/CP guidance protocol on mothers' feeding practices.

Aim of the Study

The aim of the study was to evaluate the effect of implementing cleft lip and cleft palate guidance protocol on mothers' feeding practices.

Research Hypothesis

Mothers' knowledge and reported feeding practices mean scores regarding CL/CP may be improved after implementation of the guideline protocol than before.

Method

Study Design

A quasi-experimental (pre/post) design was used.

Setting

The study was conducted at the pediatric surgical department and pediatric surgical outpatient clinic affiliated to Mansoura University Children's Hospital (MUCHs), Mansoura city, Egypt.

Subjects

The study involved a purposive sample of 27 CL/CP infants and their mothers who were admitted for 2 months during the period from beginning of March to the end of April 2022 in the previously mentioned setting and who fulfilled the following criteria:

Inclusion Criteria for Mothers

- Mothers of CL and/or CP infants who attend the study setting regularly, regardless of age and level of education.
- Mothers who accepted to participate and have not any psychiatric disorders.

Infants' inclusion criteria:

1. Both sexes & infants from birth to 1 year.
2. Before performing surgical operation.
3. Free from any other congenital anomalies.
4. Free from other chronic diseases.

Tools of Data Collection

In this study, two tools for data collecting were employed.

In order to achieve the goal of this study, researchers created a structured interview questionnaire in Arabic after examining relevant literature **(Arvalho et al., 2021).** Each mother underwent an individual interview to collect demographic characteristics and the data related to her knowledge about cleft lips & cleft palate and its treatment. It consisted of the following two parts.

Tool I: Part I: Characteristics of Mothers and Their Infants

A. **Characteristics of mothers:** as mother's age, residence, marital status, educational level, current working, family income, place of follow up near to house, a family member had congenital anomalies and knowing about cleft lip or palate

B. **Characteristics of infants**, such as, age, gender, birth order and diagnosis.

C. **Infants' Feeding criteria as reported by mothers:** ask the mothers about source of knowledge about nutrition, nutrition type, needed time for feeding, dietary supplement, child appetite, stress during feed, child position during feed, child position after feed, oral care after feed.

Part II: Mothers' knowledge about cleft lip & cleft palate: It was developed by the researchers as definition, most common sex, specific cause, common risk factors, most common types, associated Problems, best age for surgical correction, best way to treat, replacement therapy with artificial parts and familiar with postoperative care.

Scoring system of mother's knowledge: It was developed as follows. A fully inaccurate response received 0 points, an incorrect response received 1 point, and a completely correct response received 2 points. The knowledge levels of mothers were divided into four categories: A score of 75% or more indicates good knowledge, a score of 50–75% indicates average knowledge, and a score of less than 50% indicates poor knowledge. **(Abdel-Salam and Mahmoud, 2018)**

Tool (II): **Observational checklist for mothers' feeding practice:** It was developed by the researchers and included mothers' practice about bottle feeding, technique for bottle feeding and breastfeeding technique (**umar et al., 2019**).

The scoring system of mothers' feeding practices. Each practice response was scored according to whether it was completed entirely or not. Complete answers received 2 scores while incomplete responses received 1 score. Breastfeeding practice received a total score of 16, while bottle-feeding practice received a total score of 28. Based on these scores, the mothers' pre/post-feeding protocol was either Competent (75% or more) or Incompetent (less than 75%) in practice.

Ethical Considerations

This study was approved by both Mansoura Faculty of Nursing and Faculty of Medicine Research Ethics Committee at Mansoura University. Following an explanation of the study's goals, methods, duration, and advantages, the directors of the pediatric surgery outpatient clinic, the inpatient department, and Mansoura Children's Hospital all gave their approval. After informing the mothers of the study's goals, they gave verbal consent. mothers are assured that their involvement in the study is entirely voluntary. They

are free to renounce at any time.Confidentiality and confidentiality of their responses were assured.

Validity and Reliability

The tool was revised for content validation by five experts in the fields of pediatric nursing and pediatric surgery. Following their input, changes for the tool were made. The reliability of both tools was tested using the Alpha Cronbach's coefficient test. The alpha reliability of tool I part II was (α = 0.86) and that of tool II was (α = 0.90).

Pilot Study

In order to evaluate the tool's clarity, viability, and applicability, a pilot study was conducted on 10% (four mothers and infants with cleft lip and palate). The tools were modified as a result.

Field work

The data collection process took place over a period of 2 months, from the beginning of March to the end of April 2022. The researchers explained the goals and design of the study to the chief nurse of the pediatric surgery department and the pediatric surgery outpatient clinic before collecting any data. The head nurse introduced the researcher to the mothers. This research was conducted in three phases:

1. **Assessment phase**

- Researchers visited pediatric surgical departments and pediatric surgical outpatient clinic to identify mothers based on the inclusion criteria. The researchers introduced themselves and explained the purpose and procedure of the study.
- Assess the mother's knowledge of CL/CP and care. The researchers met with each mother individually to fill out a structured interview questionnaire and an observational checklist about feeding practices. Questions were asked in Arabic and researchers recorded the answers of mothers to assess their knowledge (pre-test). The time required to fill out the questionnaire was 20-30 minutes and each session take 30-45 minutes in the morning and afternoon shifts depending on the available time. Regarding maternal practices, researchers used an observational checklist to observe mothers during feeding their infants.

2. Planning phase

Based on needs' assessment, goals, and relevant references, researchers developed the theoretical and practical content of the guiding protocol for mothers of infants with CL/CP. The protocol was developed, revised, and modified from the relevant literature consisting of two parts:

- **Theoretical part:** Contains knowledge about definitions, most common sex, specific cause, common risk factors, most common types, associated Problems, best age for surgical correction, the best way to treat, replacement therapy with artificial parts and postoperative care. A handout was created to help the mothers to care for their infants. It covered the necessary needs related to their infant.
- ***Practical part:*** Infant-feeding strategies, including bottle-feeding and breast-feeding, were performed on infants in the presence of their mothers by the researchers, who were instructed on videotapes of bottle-feeding and breast-feeding techniques. Role-playing was also used to address the limitations of health awareness and the effects of illness and to answer questions from mothers.

3. Implementation Phase

a. Researchers developed guiding protocol focused on maternal needs' assessment to achieve research goals.
b. The content of the guiding protocol was given over 4 sessions consisting of 2 theoretical sessions and 2 practical sessions.
c. According to the suitable times for mothers. The researchers divided them into small groups for discussion.
d. Mothers were divided into subgroups in accordance with their level of education. The number of groups varied (2 mothers in each group), but the basic content was the same across groups. Every session lasted 30 minutes and took place on Sunday and Wednesday each week. The researchers were available on the morning shift from at the Department of Surgery and pediatric surgical outpatient clinic of the Mansoura University Pediatric Hospital, which is affiliated with Mansoura University, researchers were available on the morning shift from 11:00 am to 1:00 pm. This was an opportune time for mothers. Researchers began each session with a summary of the previous session.
e. A variety of educational methods and media were used to implement CL/CP guidance protocol, including group discussion, brainstorming, demonstration and repetition, video films, posters, and booklets.

4. Evaluation phase: After completing the protocol content, the post-test was conducted using the same form of pertest (Tool 1, Part II and Tool

II) to assess the effectiveness of CL/CP guidance protocol on mothers' feeding practices.

Statistical Analysis

The Social Science Statistical Package (SPSS) version 20 was used to analyze the data. Frequencies, percentages, means, and standard deviations were all used as descriptive statistics. There was additional usage of inferential statistics. In order to compare the means of the two variables in one group, a paired-sample t-test was employed. The Spearman's correlation coefficient was used to determine whether two variables were correlated. Using SPSS and Microsoft Excel, graphs were made to visualize the data. If there was a less than 5% chance of mistake, the results were deemed significant (P 0.05).

Results

Table 1 represents that more than half of the mothers (55.6%) aged from 20-30 years didn't have any knowledge about cleft lip or palate and less than two-thirds of them (63%) were from rural areas and have not enough family income

Table 2 reveals that the majority of the infants (81.5%) aged from 1 to less than 6 months with less than two thirds of them (63%) were boys and less than half of them (44.4%) were first birth order in the family.

Table 3 represents that less than two thirds of the infants (63%) have complementary feeding and more than half of them (55.6%) have stress during feeding. Also, about two thirds of infants (66.7%) sterilized the bottle before feeding and less than half of them (44.4%) lie on back during feeding and 40.7% lie on right side after feeding.

Figure 1 shows that more than half of the infants (51.9%) have aspiration during feeding and only 7.4% have vomiting.

Table 4 represents a highly statistically significant difference between total mean score pre and post intervention (7.96±3.73&18.29±3.54, & *P<0.0001**). Also, Total mean artificial feeding practices score was (10.45±7.45& 23.75±6.30) with highly statistically significant difference (*P=<0.0001**). Moreover, Total mean breast feeding protocol score (6.66±4.65 & 13.91±3.46) with highly statistically significant difference (*P=<0.0001**)

Figure 2 shows that the majority of the mothers (81.5%) have poor knowledge pre feeding protocol compared to only 3.7% of them post feeding with a highly statistically significant difference *P*-value(<0.0001*).

Figure 3 represents that one quarter of the mothers (25%) have competent practice regarding pre artificial feeding protocol compared to four fifth of the mothers (80%) post artificial feeding protocol with highly statistically significant difference *P*-value(<0.0001*).

Figure 4 represents that one quarter of the mothers (25%) have competent practice regarding pre breast feeding protocol compared to the majority of the mothers (87.5%) pre breast feeding protocol with highly statistically significant difference *P*-value(<0.0001*).

Table 5 represents a statistically significant positive correlation between mothers' knowledge and breast feeding practice and their educational level post intervention (P= 0.001**& 0.006** respectively). Furthermore, strong significant positive correlation was found between mothers' knowledge & artificial feeding practice and breast feeding practices pre intervention (P=0. 000**, 0.001**) and post intervention (P=0.003** & 0.001**) respectively.

Table 1. Distribution of Mother's Personal Characteristics (n=27).

Characteristics of the mothers	n(27)	%100
Age		
less than 20	5	18.5
20-30 years	15	55.6
30-40 years	7	25.9
Mean ± SD	25.48± 5.29	
Min-Max	17-35 year	
Residence		
Rural	17	63.0
Urban	10	37.0
Current working		
Yes	1	3.7
No	26	96.3
Family income		
Enough	9	33.3
Not enough	17	63.0
Enough and saves	1	3.7
Place of follow up near to house		
Yes	5	18.5
No	22	81.5
Did you have a family member had congenital anomalies		
Yes	2	7.4
No	25	92.6
Knowing about Cleft Lip or Palate		
Yes	12	44.4
No	15	55.6
Source of knowledge	**12**	**44.4**
Family members	4	14.8
Living surrounds	3	11.1
Symposium	2	7.4
Schools	3	11.1

Table 2. Personal Characteristics of Infant with Cleft Lip and Palate (n= 27).

Characteristics of the infant	n(27)	%100
Age		
1 - less than 6 month	22	81.5
6- 12 month	5	18.5
Mean ± SD	3.77±2.636	
Min-Max	1-11 month	
Gender		
Boys	17	63.0
Girls	10	37.0
Birth Order:		
First	12	44.4
Second	2	7.4
Third	5	18.5
Forth	8	29.6
Child Diagnoses		
Cleft lip on one side	19	70.4
Bilateral cleft lip	5	18.5
Cleft palate	3	11.1

Table 3. Evaluation of Infant Feeding Criteria Reported from the Mothers

Nutrition	n(27)	100%
Source of Knowledge about nutrition		
Nurses	6	22.2
Doctors	20	74.1
Others	1	3.7
Nutrition type		
Breast feed	7	25.9
Artificial feed	3	11.1
Complementary feed	17	63.0
Needed time for feeding		
Less than 10 min	11	40.7
10min	12	44.4
More than 10 min	4	14.8
Dietary supplement		
Yes	11	40.7
No	16	59.3
Type dietary supplement	11	40.7
Liquid	8	72.7
Semi solid	3	27.3
Child appetite		
Good	12	14.8
Medium	15	85.2
Stress during feed		
Yes	15	55.6
No	12	44.4
For bottle feed		
Bottle sterilization before feed	18	66.7
Special nipple	9	33.3
Child position during feed		
Lie on back	12	44.4
Hug him on your chest	7	25.9
Position the head so that the level of head is higher than the shoulders	8	29.6
Child position after feed		
On abdomen	16	59.3
On right side	11	40.7
Oral care after feed		
Yes	4	14.8
No	23	85.2
Importance of oral care for infant		
Agree	11	40.7
Slightly agree	15	55.6
Disagree	1	3.7

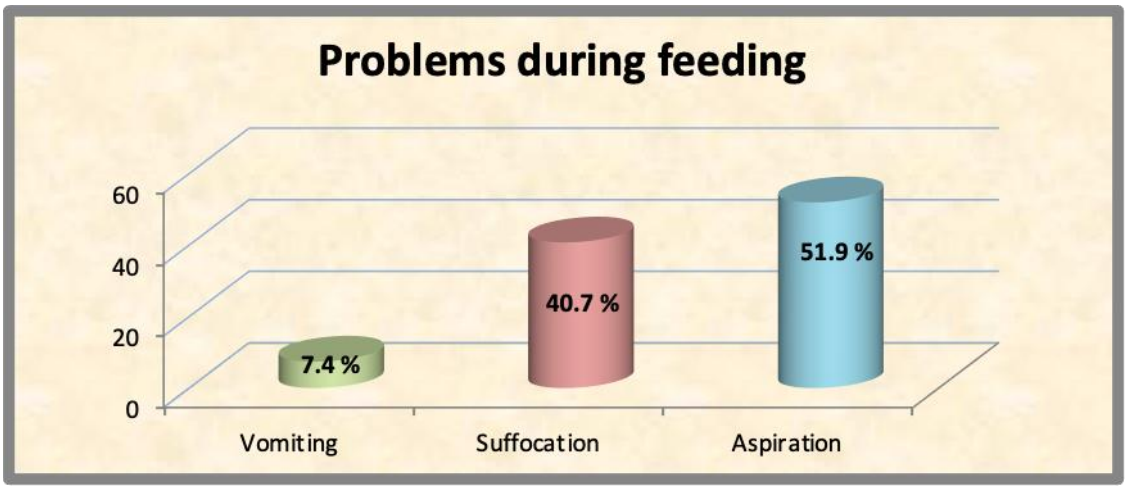

Fig 1. Problems During Feeding

Table 4. Evaluation of Total Mean Score of Mothers' Knowledge, Artificial and Breast Feeding Practices for Infants with Cleft Lip and Palate Pre and Post Intervention

Items	*Pre*	*Post*	*Test of significance*
	Mean ± SD	*Mean ± SD*	*P<0.0001**
Total mean knowledge score	*7.96±3.73*	*18.29±3.54*	*P<0.0001**
Total mean artificial feeding practices' score	*10.45±7.45*	*23.75±6.30*	*P=<0.0001**
Total mean breast feeding practices' score	*6.66±4.65*	*13.91±3.46*	*P=<0.0001**

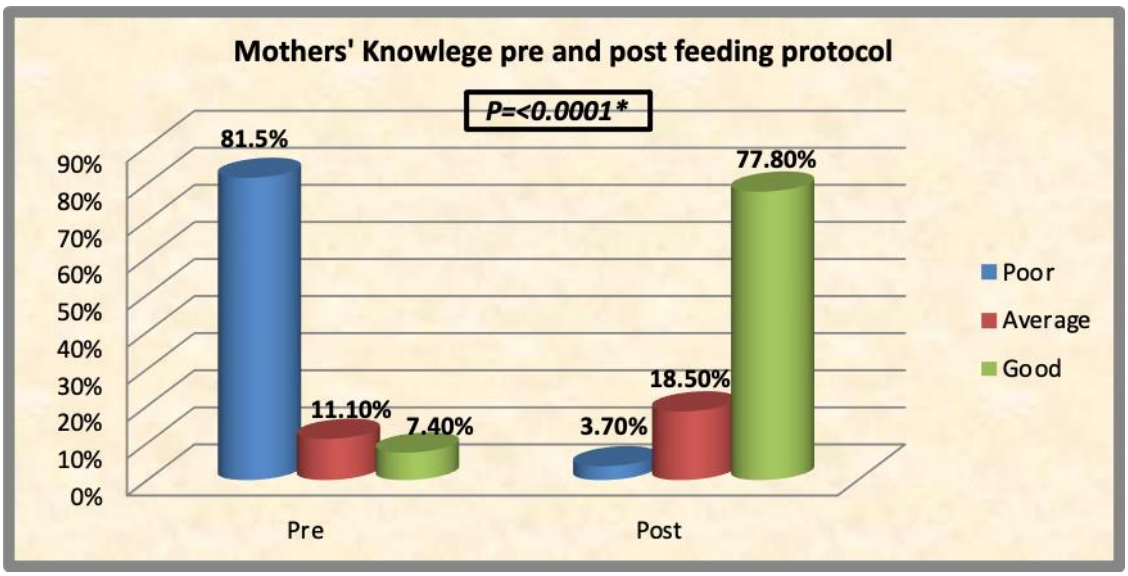

Figure 2. Mothers' Knowledge Pre and Post Feeding Protocol

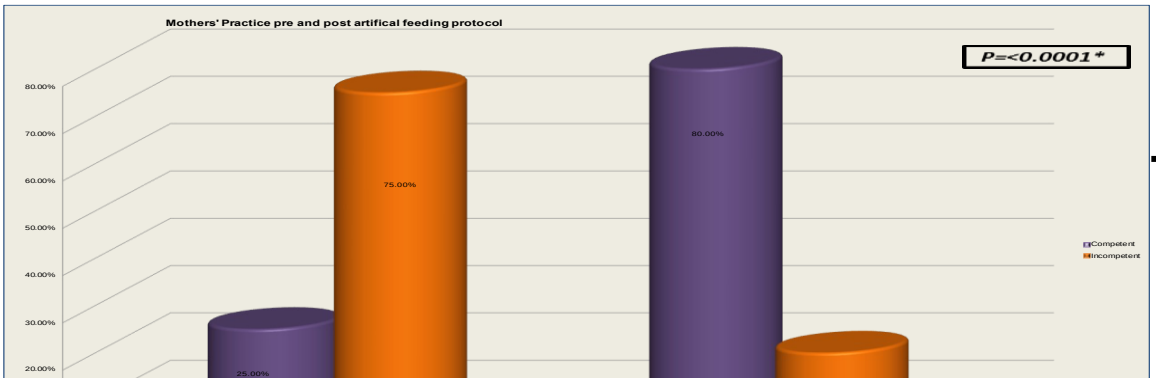

Figure 3. Mothers' Practice Pre and Post Artificial Feeding Protocol

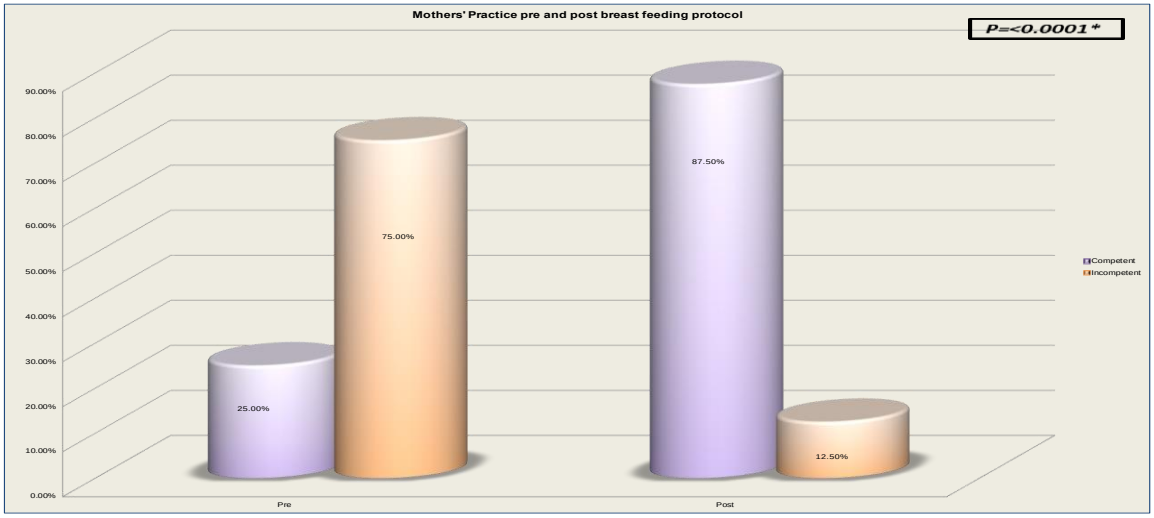

Figure 4. Mothers' Practice Pre and Post Breast Feeding Protocol

Table 5. Correlation Between Mothers' Characteristics & Their Knowledge and Total Feeding Practices Pre and Post Intervention

Items		**Knowledge**		**Practice**			
				Artificial feeding		Breast feeding	
		n=27		n=20		n=24	
		Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**
Place of Residence	R	0.572	0.701	0.507	0.537	0.638	0.569
	P	**0.002****	**0.000****	**0.001****	**0.004****	**0.022****	**0.015****
Educational Level	R	0.309	0.614	0.152	0.409	0.332	0.545
	P	0.117	**0.001****	0.523	0.073	0.113	**0.006****
Knowing About Cleft Lip Or Palate	R	0.618	0.686	0.486	0.674	0.446	0.448
	P	**0.001****	**0.000****	**0.029***	**0.028****	**0.030***	**0.001****
Knowledge (Pre)	R			0.777	-----	0.6210.000**	------
	P			**0.000****	------	**0.001****	-------
Knowledge (Post)	R				0.632	------	0.747
	P				**0.003****	--------	**0.000****

Discussion

Congenital maxillofacial defects like cleft lip and cleft palate are quite common. Eating disorders are among the biggest issues associated with cleft lip and palate. Feeding the babies who have cleft palate can be very challenging when they are breastfed, bottle fed, or both. The degree of difficulty is influenced by the crack's size, location, and other elements. Malnutrition and stunted growth are caused by failing to feed the infant **(Katge, Shetty, & Shetty 2014).** The mothers having infant with cleft lip and palate face many difficulties and troubles regarding feeding of their infant, so that they needed for appropriate and accurate knowledge and practice regarding feeding technique. So, the aim of the current study was to evaluate the effect of implementing cleft lip and cleft palate guidance protocol on mothers' feeding practices.

The current study table (1) reveals that more than half of the mothers' ages were between 20 and 30 years old, with a mean age of 25.48 ± 5.29 years. . These results are inconsistent with **Nasar, Amer,** and **Aly (2017)**, who found that half the mother's ages were less than 20 years old and the mean age was 23.15 ± 2.48. Also, the current results also showed that near two-thirds of the mothers were from rural areas. These results were consistent with **Fathy** and **Attia (2017),** who found that two-thirds of the studied mothers lived in rural areas.

Regarding the personal characteristics of the studied infants, the current finding table (2) indicates that near two-thirds of the infants were boys and had a unilateral cleft lip diagnosis. These findings were supported by a study by **Fathy** and **Attia (2017)** who reported that two-thirds of infants were male, and slightly less than half of them were diagnosed with cleft palate. Also, **Omo-Aghoja et al. (2010)** and **Dreise, Galiwango,** and **Hodges (2011)** reported that more than half of infants were diagnosed with cleft lip. On the contrary, the current results were inconsistent with **Pongpagatip, Pradubwong, Jenwitheesuk,** and **Chowchuen (2012),** who found that slightly less than half of infants have a complete unilateral CL and CP.

Regarding the evaluation of infant feeding criteria as reported by their mothers, Table 3 shows that more than half of mothers reported that their infants suffer from aspiration during feeding, and more than half suffer from stress during feeding. The results of the current study are supported by **Kumar et al. (2019)** who showed that more than two-thirds of difficulties in feeding infants with a cleft lip were aspiration. Furthermore, according to the results of **Nasar et al. (2017),** two-thirds of infants experience stress during breastfeeding. From a researcher's perspective, this could explain the fact that children with CL/CP tend to have feeding difficulties because their muscles are unable to adapt to create negative pressure in the oral cavity.

Concerning mothers' knowledge regarding CL/CP pre / post feeding protocol table (4) showed that there were highly statistically significant differences in mothers' knowledge at all time points before and after the feeding protocol. Consistent with our results, **Murthy, Deshmukh** and **Murthy (2020)** stated that the practice only discovered that mothers in the audiovisual module group had a better understanding of disease status and had early adaptation to breastfeeding practices. There was a significant improvement in mothers' knowledge from baseline to 6 months.

Regarding the distribution of all mothers' practices before and after the feeding protocol, figure 3 demonstrated that there was a statistically significant difference between mothers' practices before and after the feeding protocol, with the post-feeding protocol practices being better than the pre-feeding protocol practices. The current findings are supported by the results of many other studies regarding mothers' practices pre/post-feeding protocol which found and proved that there were statistically significant differences between mothers' practices pre/post feeding protocol, and **s**tated that breastfeeding education increased mothers' capacity to breastfeed children with CLP. **(Hasanpour, Ghazavi, & Keshavarz, 2017; Nasar et al., 2017; Cinar & Koc, 2020; Namchaitaharn, Pimpiwan, & Saengnipanthkul, 2021**). This reflects the positive effect of the implementation of CLP guidance protocol, and mothers were enthusiastic to learn more about how to feed their infants with CLP

Regarding the correlations between the mother's total knowledge, practices, and their personal characteristics, Table 5 shows the relationship between the mother's knowledge and breastfeeding practices and her level of education before and after the intervention showed a significant positive correlation (P = 0.117 & 0.001 *). & (P=0.113 & 0.006*). These results come in harmony with **Adnan** and **Muniandy (2012)**, who asserted that the mother's education level is related to the child's eating habits. In addition, a study by **Owotade et al. (2014)** showed that education level

had a statistically significant effect on mothers' awareness and understanding of CLP. This is because more educated respondents tended to have higher awareness and knowledge (P<0.0001). In the contrary, the current results disagreed with **Wijekoon, Herath, Mahendran (2019)** who found that mothers' awareness and educational attainment did not significantly correlate. Furthermore, The present study also illustrated that there was a strong significant positive correlation between mothers' knowledge & artificial feeding practices and breast feeding practices pre-guidance feeding protocol and post--guidance feeding protocol. These were in harmony with a study conducted by **Mohamed, Attia,** and **AbdElnabi (2022)** who found that at the end of the intervention, there was a highly significant statistically positive correlation between the studied mothers' overall awareness, overall practice, and overall reported practice.

Conclusion

The study concluded that implementing CL/CP guidance protocol has a positive effect on Mothers' feeding practices.

Recommendations

- A multidisciplinary team of CL/CP should promote continuing comprehensive education programs for mothers having infants with CL/CP for the best care and nutritional support.
- Further research should be conducted to help mothers overcoming feeding problems in infants with CL/CP.
- Assign a dedicated mental health professional to help mothers of infants with CL/CP ease their fears and anxiety.

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