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Effect of an Educational Program on Mothers' Performance Regarding Care of their Children Undergoing Ptosis Surgery

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Abstract

Ptosis surgeries are one of the most performed surgeries by the ophthalmic plastic surgeons worldwide. Mothers, as primary caregivers, are essential in ensuring continuity of postoperative care and supporting their children's recovery. This study aimed to evaluate effect of an educational program on mothers' performance concerning care of their children undergoing ptosis surgery. A quasi-experimental research design was conducted in Ophthalmology Clinics of Benha University Hospital which is affiliated to Ministry of Higher Education and Scientific Research. This study was involving a simple random sample of 140 mothers and their children aged three to 18 years undergoing ptosis surgery. A structured interviewing questionnaire was used to collect characteristics of mothers and their children, medical data and mothers' knowledge. Mothers' reported practices and attitude were evaluated via a validated interview questionnaire sheet. The findings revealed that, an educational program achieved research hypothesis, which improved knowledge, reported practice and attitude of mothers caring for their children undergoing ptosis surgery. A highly statistically significant positive correlation was found between total knowledge level, total reported practice level, and total attitude level among the studied mothers pre and post educational program and at follow-up ($P<0.001$). It is strongly recommended that structured maternal educational programs be systematically integrated into pediatric ophthalmology services to ensure that mothers consistently receive standardized, evidence-based guidance for both preoperative and postoperative care of children undergoing ptosis surgery.

Key words: Children, Educational Program, Mothers' Performance, Ptosis Surgery.

Introduction

Ptosis, or blepharoptosis, is defined as the abnormal lowering of the upper eyelid, a term derived from the Greek word meaning “to fall.” Clinically, it is characterized by a drooping of the eyelid margin, which may obscure 3 mm or more of the pupil. Ptosis can be categorized by its onset (congenital or acquired), laterality (unilateral or bilateral), and underlying etiology, including neurogenic, myogenic, mechanical, or traumatic causes (Solarz et al., 2025).

Congenital ptosis represents the most frequent type in pediatric populations and is often due to underdevelopment of the levator palpebrae superioris muscle. This condition may appear in isolation or alongside ocular and systemic disorders and can contribute to visual impairment, refractive errors, or abnormal visual development. Early surgical intervention is generally recommended to prevent amblyopia and to preserve the visual axis (Ke et al., 2023).

Acquired ptosis develops later in life due to factors such as levator muscle weakness, trauma, or nerve dysfunction affecting eyelid elevation. Aetiologies include mechanical stretching, disease, or prolonged eyelid stress, as well as neurologic damage. Some cases may improve spontaneously, whereas others necessitate surgical correction (Beres, 2023).

The functional mechanism of eyelid elevation involves the levator palpebrae superioris, its aponeurosis, and Müller’s muscle, with neural control via the oculomotor nerve and cervical sympathetic pathways. Dysfunction of these structures, or systemic conditions such as diabetes mellitus, can result in ptosis (Alnosair et al., 2023).

Children with ptosis commonly present with visual disturbance, compensatory head posture, cosmetic concerns, eye discomfort, or excessive tears, depending on the severity and laterality of the condition (Daifalla et al., 2025).

Mild ptosis cases without significant visual impact can be monitored, while non-surgical interventions, including patching for amblyopia, corrective lenses, or ptosis crutches, may be applied (Thacker et al., 2025).

Surgical management remains the primary intervention to restore eyelid function, protect vision, and improve cosmetic appearance (AbdElbaky et al., 2025) Timing of surgery depends on visual axis obstruction and risk of amblyopia, with urgent procedures indicated when vision is threatened, and elective surgery considered after 4–5 years in milder cases (Chen et al., 2025).

Nurses play a vital role in perioperative care, encompassing preoperative education, psychological support, and readiness assessment, intraoperative assistance and aseptic monitoring, and postoperative care including wound management, pain control, complication detection, and caregiver instruction (Berar et al., 2025).

Mothers, as primary caregivers, are integral to postoperative management. Their responsibilities include administering medications, performing proper wound care to prevent infection, avoiding eyelid trauma, applying cold compresses to reduce swelling, maintaining head elevation, and observing for complications such as increased redness, discharge, or swelling (Jeong & Park, 2024; Alshammari et al., 2024). They must also ensure adherence to follow-up schedules, understand potential long-term interventions, and provide emotional support to their children during recovery (Sun et al., 2025).

Significance of the study

Pediatric ptosis has implications for vision, aesthetics, and psychosocial well-being. Maternal involvement is crucial for treatment compliance, postoperative care, complication monitoring, and recovery facilitation (Yavuz et al., 2023).

Ptosis is among the most common eyelid disorders in clinical settings. The worldwide prevalence in children under 19 years ranges from 4.7 to 13.5 per 100,000, with a higher predominance in males. Congenital ptosis constitutes nearly 90% of pediatric cases, while

acquired forms are comparatively rare (Li et al., 2024).

Despite its prevalence, there is limited recent epidemiological data on pediatric ptosis in Egypt, underscoring the need for research to guide care and educational strategies, thereby contributing to improved health outcomes, reduced complications, and enhanced quality of life.

Aim of the Study

This study aimed to evaluate effect of an educational program on mothers' performance in caring for their children undergoing ptosis surgery.

Research hypotheses:

The educational program will improve mothers' knowledge, reported practice and attitude towards care of their children undergoing ptosis surgery.

2. Materials and Methods

2.1. Study Design

A quasi-experimental design was employed.

2.2. Setting

The research was carried out at the Ophthalmology Clinics of Benha University Hospital, in Qalyubia, Egypt, affiliated to the Ministry of Higher Education and Scientific Research.

2.3. Participants

A total of 140 mothers and their children, aged three to 18 years, undergoing ptosis surgery were recruited via simple random sampling.

2.3.1. Sample Size Determination:

The sample size was calculated via Slovin's formula:

$n = N / (1 + N (e^2))$

Where:

n = number of subjects
N = total population (215)
e = margin of error (0.05)

2.4. Data Collection Tools

Three tools were employed in the current experiment:

2.4.1. Tool (I): Structured Interviewing Questionnaire:

Part 1: Characteristics of mothers
Part 2: Characteristics of the children
Part 3: Children's medical history
Part 4: Mothers' knowledge

This section was adapted from (Dutton et al., 2022) and (Abo-Eleinin & Salama, 2020) and divided into:

Section A: Knowledge about ptosis in children – 10 questions.

Section B: Knowledge about ptosis surgery in children – 13 questions.

2.4.2. Tool (II): Interviewing questionnaire sheet concerning mothers' reported practice regarding care of their children undergoing ptosis surgeries: It was designed by researcher adapted from (Crum & Gensure, 2021) and (Gwenhure & Shepherd, 2019) to assess mothers' reported practice.

The practices include six main skills which involves; Hand washing practice – nine steps. Eye care practice – 17 step. Wound care practice – 28 step. Eye drop administration practice – 22 step. Practice for ointment application – 17 step. Practice of oral antibiotic administration – 14 step.

2.4.3. Tool (III): Interviewing questionnaire sheet concerning mothers' attitude towards care of their children undergoing ptosis surgery: It was designed by researcher in the form of 3 points Likert scale, based on (Almogbel et al., 2023). To assess mothers' attitude, it included 28 item.

2.5. Scoring Systems

Knowledge Scoring: Right response were scored "two", incomplete answer "one", and incorrect answer or no information at all "zero". Total scores: Adequate → if the total score of knowledge was 60% - 100%. Inadequate → if the total score was < 60%.

Mothers' reported practice Scoring: With a score of one for done and a score of zero for not done, we have a grading system for the moms' stated practice. To get the percentage score, we added together all the reports of practice steps and then divided by the total number of steps. Mothers' stated practice scores were totaled and grouped according to a range of zero to 107 which further categorized: Satisfactory→ if the total score of lifestyle pattern was ≥ 75% (≥80 point). Unsatisfactory→ if the score was < 75% (< 80 point).

Mothers' attitude Scoring: Mothers' attitudes about caring for their children after ptosis surgery

were graded using a system where three was for Always, two for Sometimes, and one for Never. To get the percentage score, we added together all the attitude items' scores and then divided that amount by the entire number of items. The total attitude scores were calculated and ranged from (zero-84) which further categorized: Positive→ if the total score of attitude was ≥ 60% (>50 point). Negative→ if the score was < 60% (< 50 point).

2.6. Validity of the tool:

Content validity was assessed by a jury of three professors Faculty's Staff Nursing-Benha University; Two Experts from the Pediatric Nursing Specialties & One Community Health Nursing Specialties. Minor modifications (rephrasing and rearrangement) were made based on their feedback.

2.7. Reliability of the tool:

Reliability of the tool was applied by the researcher for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar condition on one or more occasion. Answers from repeated testing were compared (test-re-test reliability). The reliability was done by Cronbachs Alpha coefficient test which revealed that each of the three tools consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool. The internal consistency of the knowledge was 0.93, attitude was 0.85, while reported practice were 0.89.

2.8. Pilot Study

A pilot study was conducted on 14 mothers (10% of the sample) to test feasibility and clarity. No further modifications were required; therefore, these 14 participants were included in the final study sample.

2.9. Ethical Considerations

An official letter was issued and permission was obtained from Dean of Faculty of Nursing, Benha University and an official approval was obtained from administrators of the previous mentioned study setting to carry out the research. A clear explanation was given about the nature, importance and expected outcomes of the study. Written approval consent from the Scientific Research Ethical Committee, Faculty of Nursing, Benha University was obtained code REC-PN-P75. Also informed written consent has been obtained from all studied mothers.

2.10. Field Work

The data collection process conducted in four phases;

Assessment phase

The experiment incorporated interviews with the mothers and their children to collect baseline data. During the initial visit to the clinics, the researcher conducted individual interviews with each mother. The process began with the researcher introducing herself to the mothers, providing a brief explanation of the experiment, its objectives, and expected outcomes, and obtaining their written consent to participate. Mothers' phone numbers were collected to facilitate communication, interaction, motivation, and support during the experiment period, and follow-up. A pre-test was conducted during this phase.

Planning Phase

As per baseline data obtained from the assessment phase and a review of relevant literature, the researcher designed the objectives of the program according to the actual needs of the studied mothers. The program was designed in clear, simple Arabic language, the content was constructed, reviewed, and modified to improve mothers' performance. Various teaching methods were employed. Multiple media were used to present the content effectively and to facilitate proper understanding of the material.

Implementation Phase

The actual fieldwork of the experiment lasted approximately twelve months. The researcher visited the previously mentioned setting three days per week. The program was delivered through seven sessions, three theoretical sessions lasted about 30–40 minutes and four practical sessions took approximately 30–45 minutes.

The average number of mothers were ranged from two to four per day. Each session began with a summary of the previous session and an explanation of the objectives of the current topic. During the post program and follow-up periods,

the researcher maintained contact with the mothers through WhatsApp and telephone calls to respond to inquiries related to care of their children.

Evaluation Phase

After implementing the program, a post-test was conducted immediately and again one month later to evaluate mothers' performance concerning care of their children undergoing ptosis surgery. The post-test used the same format as the pre-test to allow comparison of changes in performance.

2.11. Statistical Analysis

Data collected from the experiment sample were revised, coded, and entered via a personal computer. The data were organized, tabulated, and analyzed via appropriate statistical tests. Data entry and analysis were performed via SPSS version 21. Descriptive statistics included frequencies and percentages for qualitative data and mean ± standard deviation for quantitative data. Statistical significance and associations were tested via the Chi-square test (χ^2) and correlation matrices to examine relationships between variables. Statistical significance was set at $p < 0.05$.

3. Results

Table 1 Distribution of the studied mothers regarding their characteristics (Number =140).

Characteristics of the studied mothers	Number	%
Age/years		
>20 years	15	10.7
20<30 years	33	23.6
30<40 years	72	51.4
≥ 40 years	20	14.3
Min-Max	18-45	
Mean ±SD	32.4±8.2	
Educational level		
Can't read and write	11	7.9
Read and write	17	12.1
Primary education	40	28.6
Preparatory education	13	9.3
Secondary school education	24	17.1
Bachelor's	35	25.0
Job status		
Working	48	34.3
Does not work	92	65.7
Income		
Enough and save	26	18.6
Enough	83	59.3
Not enough	31	22.1
Current marital status		
Married	74	52.9
Divorced	37	26.4
Widowed	29	20.7
Place of residence		
Rural	88	62.9
Urban	52	37.1

More than half (51.4%) of the studied mothers were aged between 30 and 40 years, with a mean ± SD of 32.4 ± 8.2 years, as shown in Table 1.

Table 2 Distribution of the studied children regarding their Characteristics (Number =140)

Characteristics of the studied children	Number	%
Age/years		
3<6 years	75	53.6
6<9 years	36	25.7
9<12 years	22	15.7
12< 15years	5	3.6
15≤18 years	2	1.4
Min-Max	3-14	
Mean ±SD	6.66±2.71	
Gender		
Male	79	56.4
Female	61	43.6
Childs' rank in his family		
First	32	22.9
Second	59	42.1
Third	28	20.0
Fourth or more	21	15.0
Educational level		
Nursery school	75	53.6
Primary school	58	41.4
Preparatory school	7	5.0
Secondary school	0	0.0
Is there a degree of kinship between the parents		
Yes	84	60.0
No	56	40.0
If there is a degree of kinship between the parents, what is the type of kinship? (n=84)		
First degree kinship	42	50.0
Second degree kinship	25	29.8
Third degree kinship	17	20.2

More than half (53.6%) of the studied children were aged between three and six years, with a mean ± SD of 6.66 ± 2.71 years. Concerning gender, more than half (56.4%) were male, as indicated in Table 2.

Table 3 Distribution of the studied children regarding their medical history (Number =140)

Childs' medical history	No.	%
Child's age in years when diagnosed with ptosis		
> 3years	14	10.0
3<6 years	77	55.0
6<9 years	22	15.7
9<12 years	19	13.6
12< 15years	5	3.6
15≤18 years	3	2.1
Side is affected by ptosis		
Right side	45	32.1
left side	21	15.0
Both sides (Left & right)	74	52.9
**Tests were done to diagnose the child's condition		
Marginal reflex distance	93	66.4
Slit lamp test	18	12.9
Evaluation of the child's visual acuity	25	17.9
Eye movement examination	11	7.9
Field of vision test	6	4.2
Did any of the family members suffer from ptosis		
Yes	94	67.1
No	46	32.9
If the answer is yes, what is the degree of kinship with the child (n=94)		
Father	15	16.0
Mother	22	23.4
Brother/sister	44	46.8
Aunt/ uncle	6	6.4
Grandfather/grandmother	7	7.4
Have eyelid surgeries been performed before		
Yes	47	33.6
No	93	66.4
If eyelid surgeries were performed before, what type of surgery was performed (n=47)		
Ptosis surgery	25	53.2
Eyelid retraction	13	27.7
Eyelid reconstruction	9	19.1

More than half (55%) of the children were diagnosed with ptosis between three and six years of age. Concerning diagnostic procedures, two-thirds (66.4%) underwent marginal reflex distance testing, and two-thirds (67.1%) had family members with ptosis, with approximately two-fifths (46.8%) being siblings.

Additionally, two-thirds (66.4%) of the children had not undergone previous eyelid surgeries, as shown in Table 3.

Table 4 Correlation between total knowledge level, total reported practice level and total attitude level among the studied mothers pre and post educational program and at follow-up (Number =140).

Items		Total knowledge level		Total attitude level		Total reported practice	
		correlation coefficient	p-value	correlation coefficient	p-value	correlation coefficient	p-value
Pre educational program	**Total knowledge level**	1	-	0.65	.000**	0.71	.000**
	Total attitude level	0.65	.000**	1	-	0.75	.000**
	Total reported practices	0.71	.000**	0.75	.000**	1	-
Post educational program	**Total knowledge level**	1	-	0.85	.000**	0.92	.000**
	Total attitude level	0.85	.000**	1	-	0.69	.000**
	Total reported practices	0.92	.000**	0.69	.000**	1	-
Follow-up	**Total knowledge level**	1	-	0.82	.000**	0.93	.000**
	Total attitude level	0.82	.000**	1	-	0.68	.000**
	Total reported practices	0.93	.000**	0.68	.000**	1	-

A highly statistically significant positive correlation was observed between total knowledge level, total attitude level, and total reported practice level among the studied mothers pre- and post-program and at follow-up ($P < 0.001$), as shown in Table 4.

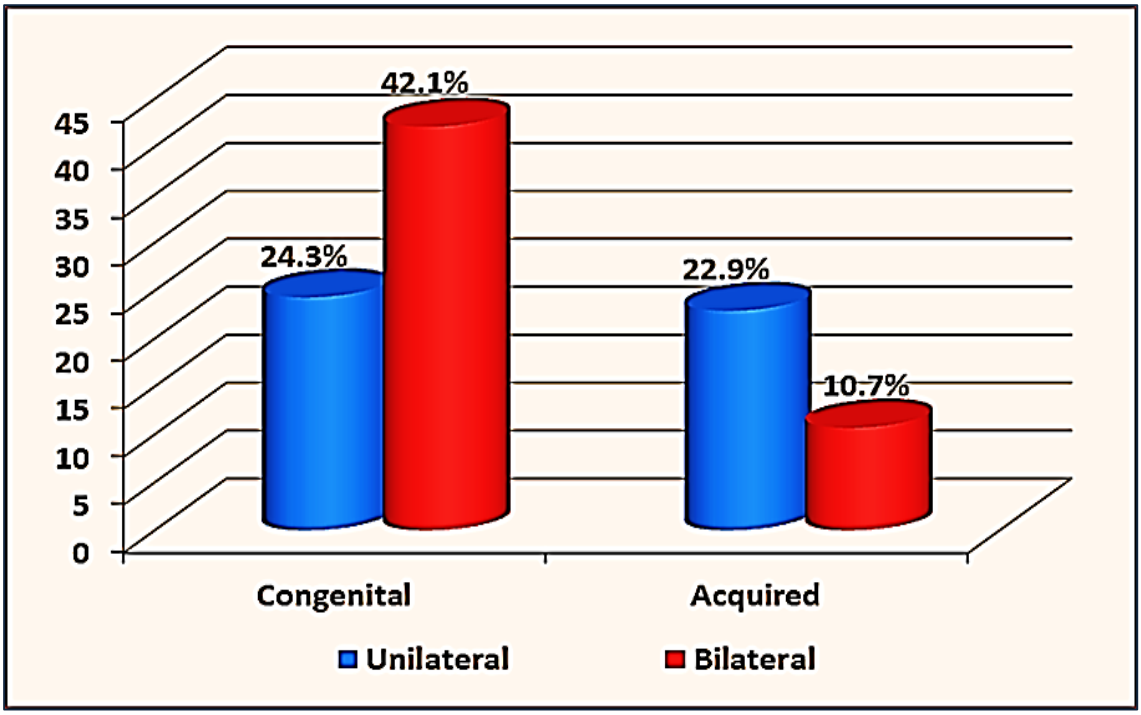

Figure 1 Percentage distribution of the studied children regarding their type of ptosis (n=140).

Approximately two-fifths (42.1%) of the studied children had bilateral congenital ptosis, whereas more than one-fifth (22.9%) had unilateral acquired ptosis, as illustrated in Figure (1).

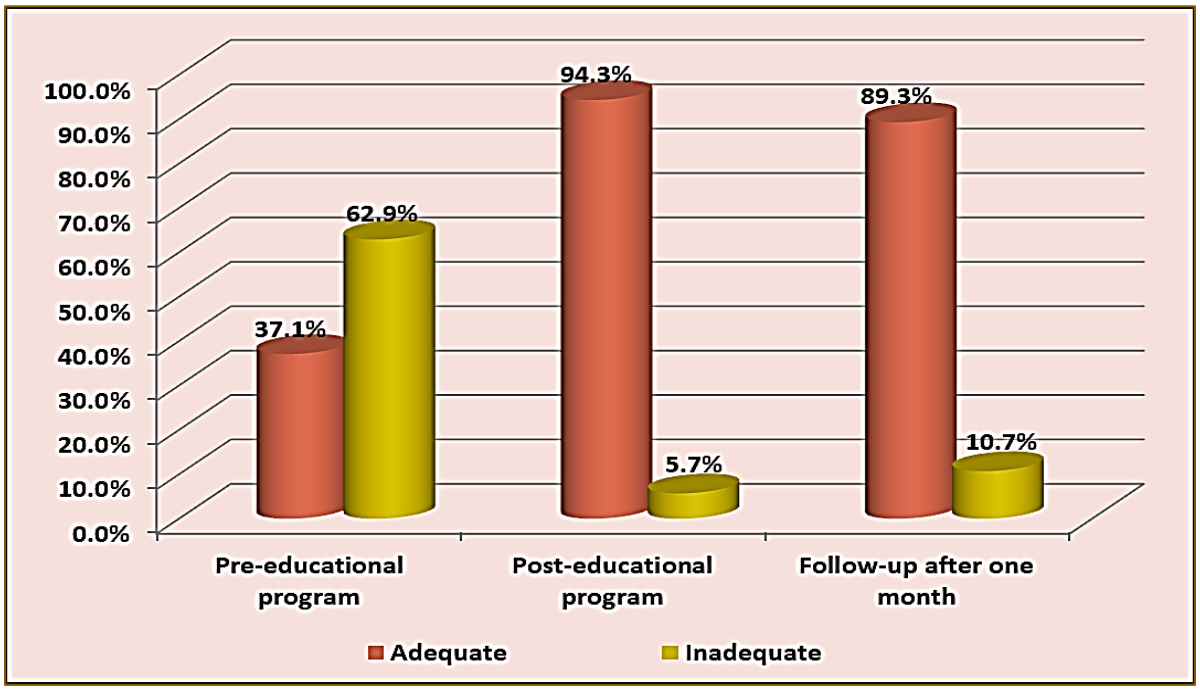

Figure 2 Percentage distribution of the studied mothers' total knowledge level regarding ptosis and ptosis surgery throughout educational program phases (n=140).

Changes in mothers' knowledge levels concerning ptosis and its surgical management are depicted in Figure (2). Pre-program, more than one-third (37.1%) of mothers had adequate knowledge, which increased to the majority (94.3%) post-program and remained high at follow-up (89.3%). In contrast, more than three-fifths (62.9%) had inadequate knowledge pre- program, which declined substantially to minority (5.7%) post- program and (10.7%) at follow-up.

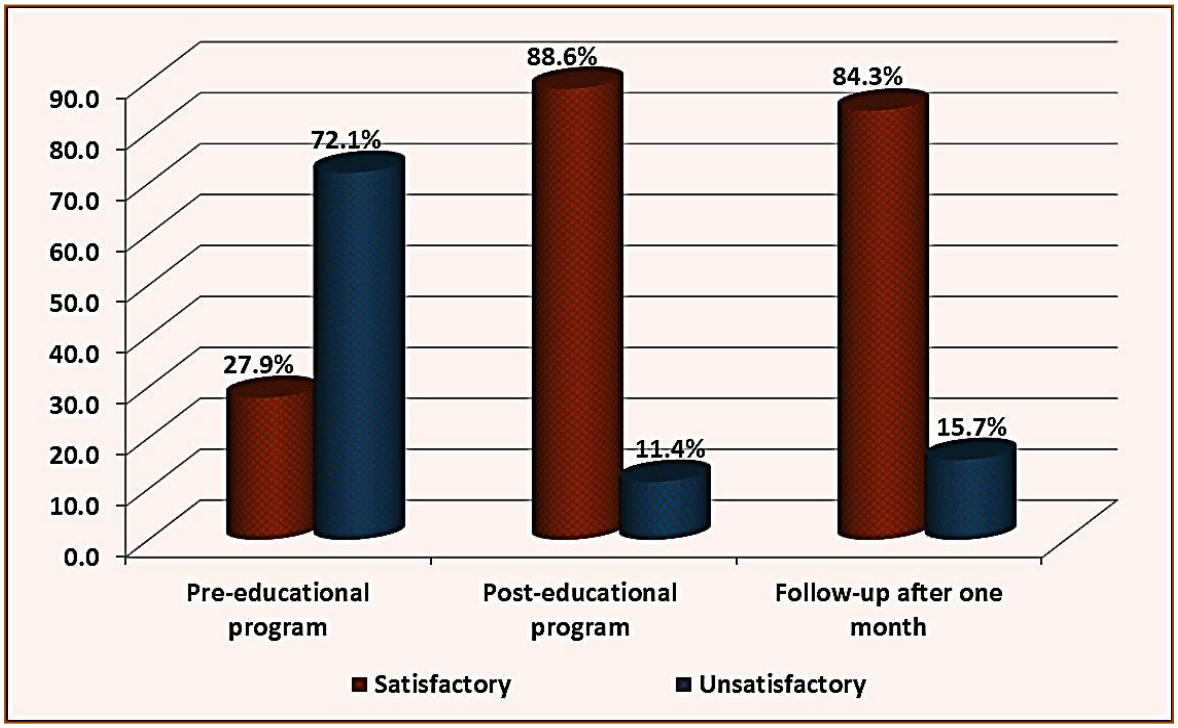

Figure 3 Percentage distribution of the studied mothers' total reported practice regarding care of their children undergoing ptosis surgery throughout educational program phases (n=140).

Reported practices among mothers are clarified in Figure (3); less than one-third (27.9%) demonstrated satisfactory practices pre-program, which increased to a majority (88.6%) post-program and remained high at follow-up (84.3%).

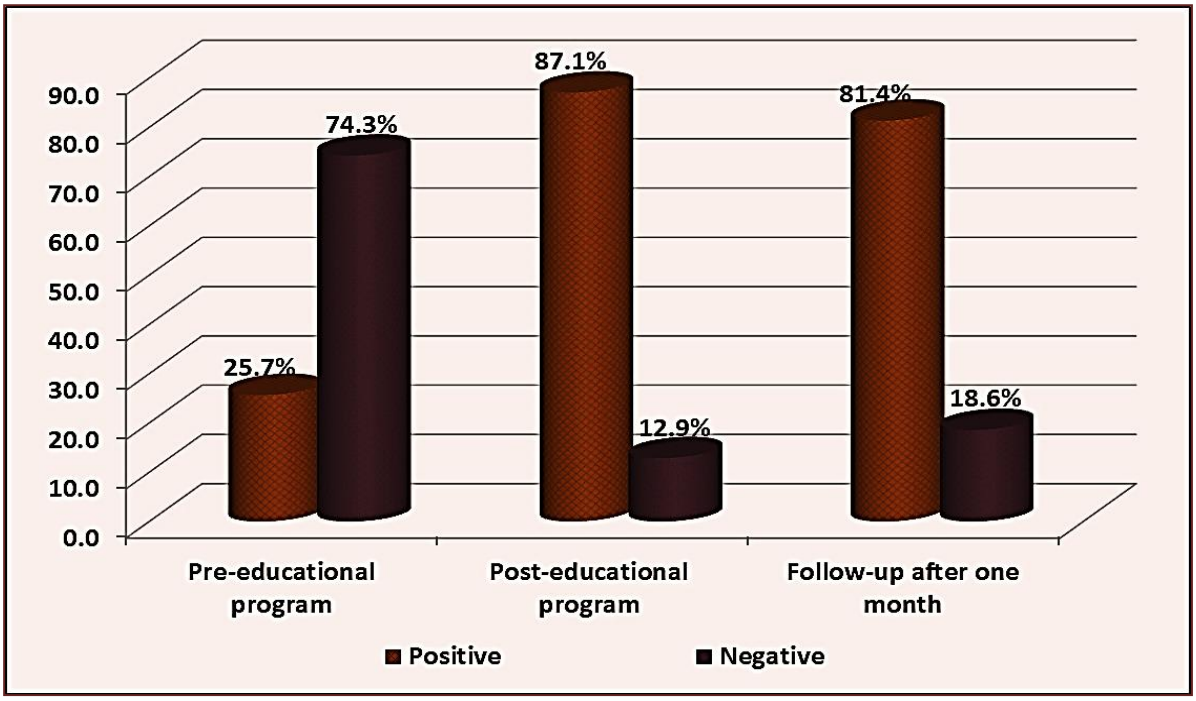

Figure 4 Percentage distribution of the studied mothers' total attitude towards care of their children undergoing ptosis surgery throughout educational program phases (n=140).

Mothers' total attitudes are represented in Figure (4); a quarter (25.7%) of the studied mothers had a positive total attitude pre-program, which increased to the majority (87.1%) post-program and remained high at follow-up (81.4%).

Discussion

Successful outcomes in pediatric ptosis surgery depend not only on surgical precision but also on effective postoperative care, with mothers playing a central role in ensuring proper recovery and preventing complications (Wang, 2023).

Structured educational programs empower mothers to acquire the necessary knowledge and practical skills, thereby enhancing postoperative management and improving overall surgical outcomes (Khalili et al., 2022). Nurses are essential in this process, providing education, addressing concerns, reinforcing techniques, and monitoring adherence through follow-up interventions (Mohamed et al., 2024; Banerjee et al., 2025). Therefore, the present experiment evaluated impact of an educational program on mothers' performance concerning care of their children undergoing ptosis surgeries.

Concerning the mothers involved in the present experiment, more than half were aged from 30 to less than 40 years old with mean ±SD was 32.4±8.2 years. This may be due to the fact that mothers within this age range often fall within the peak childbearing and caregiving period, making them more likely to be involved in medical decisions concerning their children's health.

Similar to our results, (Hasbi et al., 2024) in their Malaysian study titled "Evaluation of the Effect of Surgeries on Psychosocial Function and Quality of Life in Children with Simple Congenital Ptosis and their Parents," reported that the majority of participating mothers were between 31 and 40 years old.

Concerning the children involved in the present experiment, more than half were between three and just under six years old, with a mean ± SD of 6.66 ± 2.71 years. This pattern may reflect the fact that ptosis surgeries are commonly undertaken during early childhood, particularly when the condition starts to interfere with daily interaction. Furthermore, this age range represents a pivotal period for detecting and managing ptosis, as any visual impairment during these early years can negatively influence a child’s developmental progress and learning abilities.

Aligned with this observation, the Chilean experiment by (Paulos et al., 2024), under the title "Management of congenital blepharoptosis in pediatric patients," in Chile, found that a mean age of 7.7 ± 4.7 years among the studied children. Furthermore, the current experiment showed that more than half of the children were male. This may be attributed to the higher prevalence of congenital ptosis in boys, as suggested by several studies. Anatomical and genetic factors affecting eyelid development are believed to contribute to this gender difference, resulting in a higher incidence of ptosis among male children.

This result aligns with the Chinese experiment by (Ma et al., 2022), titled "Application of e-PTFE frontalis suspension in the treatment of congenital ptosis in children," which found that the majority of the studied children were male.

Concerning the medical history of the studied children, the present experiment indicated that over half of the participants were aged between three and less than six years at the time of ptosis diagnosis. This finding likely reflects the fact that ptosis is commonly identified during early childhood, a critical period for visual development. The age range of three to less than six years coincides with a developmental stage in which visual impairments, such as ptosis, become more evident and may interfere with a child’s learning and interaction with their environment.

In line with this observation, the Italian experiment by (Ripa et al., 2022), published as "Association of Eyelid Disorders and Ocular Motility Disorders in Pediatric Age: an Epidemiologic Analysis. A Multicenter Retrospective Experiment," found that children were diagnosed with ptosis at a younger mean age of two years (one to six years).

Furthermore, the present experiment revealed that approximately two-fifths of the studied children presented with bilateral congenital ptosis. This finding may reflect the relatively common presentation of bilateral involvement in congenital ptosis and suggests a hereditary component affecting both sides of the face equally.

Supporting this, the Indian experiment by (Assadi et al., 2021), published as "Effect of congenital ptosis correction on corneal topography: A prospective experiment," reported that the majority of children exhibited bilateral congenital ptosis.

Moreover, the current experiment demonstrated that about two-thirds of the studied children had their condition assessed via the marginal reflex distance. This is likely because MRD is a standardized, rapid, and non-invasive method that provides an objective measurement of eyelid position relative to the corneal light reflex, making it highly suitable for evaluating pediatric ptosis.

In this regard, the work conducted by (Ji et al., 2025), titled "Efficacy and Safety of Conjoint Fascial Sheath (CFS) Suspension in the Treatment of Blepharoptosis: A Systematic Review and Meta-analysis," reported that MRD changes served as the primary endpoint for most participants, emphasizing its key role in both diagnosis and follow-up. Similarly, the experiment in China by (Liu et al., 2022), "Refractive error characteristics and influence on ocular parameters in patients with unilateral congenital ptosis," described MRD as the principal clinical measurement for quantifying ptosis and grading its severity.

Moreover, the current experiment represented that approximately two-thirds of the studied children had relatives affected by ptosis, and more than two-fifths of these were their brother or sister. This observation may reflect the hereditary nature of many congenital ptosis cases, in which autosomal inheritance with variable expressivity leads to clustering within families, particularly among first-degree relatives. In a similar manner, the experiment conducted by (Ripa et al., 2022), reported that ⅗of the studied cases had a family history of ptosis, with the largest proportion involving a sibling. Conversely, the experiment performed by (Prabha & Padma, 2023), stated that a family history of congenital ptosis was present in less than one-fifth of cases.

In addition, the current experiment demonstrated that about two-thirds of the studied children had not undergone previous eyelid surgeries. This may be due to standard clinical practice of postponing ptosis surgeries until children are old enough for safer anesthesia, when measurements are more stable, and levator function can be accurately evaluated. Furthermore, parental caution, limited access to services, financial constraints, and waiting lists may contribute to delaying surgical intervention, explaining why a substantial proportion of children had no prior eyelid procedures.

This result coincided with the experiment in China conducted by (Ma et al., 2022), which reported that most of the studied children had not received prior eyelid interventions. In contrast, the experiment by (Diab et al, 2023), in Egypt, titled "Combined levator and frontalis muscle advancement flaps for recurrent severe congenital ptosis," indicated that a considerable number of studied patients had undergone prior eyelid surgeries.

Concerning the mothers' overall knowledge level about ptosis and its surgical management across the program phases, the present experiment showed that more than one-third of mothers had an adequate total knowledge level pre-program, which increased to the most post program and to majority at follow-up. Similarly, more than three-fifths had an inadequate total knowledge level pre- program, which decreased to a minority post program and at follow-up.

This improvement may be attributed to the effectiveness of the educational program in providing well-structured and comprehensive information, significantly enhancing the mothers' overall knowledge. The continued improvement at follow-up reflects both immediate learning and long-term retention, likely due to the clarity of the educational content, the use of simple and understandable language, and the mothers' motivation to support their children's health and recovery. Similarly, the experiment by (Khan et al. 2023), less than one-half of the surveyed mothers possessed adequate knowledge concerning childhood eye diseases.

Likewise, the experiment in China conducted by (Wang, 2023), entitled "Analysis of the Impact of Nursing Interventions on Treatment Compliance in Children with Congenital Ptosis after Surgeries,"

showed significant improvement in knowledge immediately post-intervention. This finding was corroborated by the American study by (Anulao, 2023), who studied the "Impact of a Preoperative Education Video on Parent Satisfaction in Pediatric Ophthalmology," and concluded that preoperative video education positively influences parents' understanding and knowledge.

Concerning the mothers' total reported practice concerning care of children undergoing ptosis surgeries, the current experiment showed that less than one-third had satisfactory total reported practice pre-program, which increased to the majority post- program and at follow-up. Similarly, more than two-thirds had unsatisfactory total reported practice pre- program, which decreased to less than one-fifth post- program and at follow-up. This may reflect the educational program providing practical, hands-on training and clear take-home instructions, which converted key postoperative tasks into simple and repeatable routines.

Similarly, the experiment by (Abd-El Naby et al., 2025), "Health Educational Program for Mothers Concerning Care of their Children with Retinoblastoma," indicated that fewer than one-half of mothers had satisfactory total practice pre-program, which improved to the majority post-program.

Concerning the mothers' total attitude concerning care of children undergoing ptosis surgeries, the current experiment highlighted that about one¼ of the studied mothers had a positive total attitude at pre- program, which increased to a majority of them at post program and at follow-up. As well, slightly less than three-quarters of them had a negative total attitude at pre- program, which decreased to less than one-fifth at post program and at follow-up.

This may be attributed to the effect of educational program that effectively addressed the mothers' knowledge gaps, concerns, and emotional readiness regarding ptosis surgery and postoperative care. Also, this suggests that when mothers are well-informed, they are likely to develop a more confident and supportive attitude towards the care required during the surgical process. Similarly, the experiment by (Alhemaidi et al., 2025), "The Prevalence and Parental Awareness, Perception, and Attitudes towards Eye Diseases in Children Under 18 years old, in Saudi Arabia," which reported that one quarter of the studied parents had a positive attitude toward their children's eye diseases.

Concerning correlation between total knowledge level, total attitude level and total reported practice level among the studied mothers, the present experiment showed a highly statistically significant positive correlation pre- and post-program and at follow-up. This may reflect the interdependent relationship between knowledge, attitude and practice in the context of health education. As mothers gain accurate and comprehensive knowledge about ptosis and its care through the educational program, their attitudes naturally become more positive, confident, and proactive. This shift in attitude likely motivates them to apply what they have learned, resulting in improved caregiving practices.

This finding was supported by (Khattak et al., 2023), who observed that parents' knowledge of ophthalmic problems significantly correlated with their attitude and practice. Additionally, parents' attitude was significantly correlated with their practice. This result also was in accordance with the experiment carried out by (Abd El-Kader & Mohammed, 2021), titled "Effect Of An Educational Intervention On Mothers' Knowledge, Attitude And Practice About Proper Antibiotic Use In A Selected Family Health Center," which pointed out that mothers who joined the educational sessions became more aware post-educational sessions than before, they demonstrated proper practice and positive change in the attitude.

5. Conclusions

The educational program significantly improved mothers' knowledge, reported practice, and attitudes concerning the care of children undergoing ptosis surgery. These findings highlight the critical role of nurses in providing structured education, empowering mothers to deliver effective pre- and postoperative care, and ultimately enhancing pediatric patient outcomes.

Based on these conclusions, several recommendations are proposed:

Strengthen nurses' competencies as primary educators and facilitators through ongoing professional development, utilize multimedia and technology-based tools to enhance mothers' understanding and practical skills in caring for their children after ptosis surgery. Furthermore, establish post-discharge follow-up and support systems including outpatient clinics or tele-health services to ensure adherence, promptly address complications, and evaluate long-term outcomes. Finally, develop culturally appropriate educational materials to support safe home care and minimize postoperative complications.

Author Contributions

Conceptualization, H.E.A. and B.R.A.; methodology, H.E.A. and R.R.E.; software, H.E.A.; validation, H.E.A., B.R.A.; and R.R.E.; formal analysis, H.E.A.; investigation, H.E.A.; resources, B.R.A.; writing—original draft preparation, H.E.A.; writing—review and editing, H.E.A., B.R.A. and R.R.E.; visualization, H.E.A.; supervision, B.R.A. and R.R.E.; project administration, H.E.A. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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