Assessment of Mothers' Knowledge and Practices regarding Care of their Children Undergoing Ptosis Surgery

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Abstract

Background: The mothers plays a vital role in ensuring a successful recovery for children following ptosis surgery. Mothers' adhering to postoperative instructions is essential for promoting healing, preventing complications, and achieving optimal functional and aesthetic outcomes. **Aim of the study was** to assess mothers' knowledge and practices regarding care of their children undergoing ptosis surgery. **Setting:** This study was carried out in Ophthalmology Clinics of Benha University Hospital which is affiliated to Ministry of Higher Education and Scientific Research. **Design:** A descriptive quantitative study design was utilized. **Subjects:** A simple random sample of (140) mothers and their children from 3 to 18 years old undergoing ptosis surgery. **Tools of data collection: Tool I:** A structured interviewing questionnaire used to assess; socio-demographic characteristics of the studied mothers and their children, medical data of children and mothers' knowledge regarding ptosis and ptosis surgery in children. **Tool II:** Interviewing questionnaire sheet regarding mothers' reported practices regarding care of their children undergoing ptosis surgery **Results:** There were highly statistically significant relation between the studied mothers' total reported practice level and their educational level. **Conclusion:** There were highly statistically significant positive correlation between total knowledge level and total reported practice level. **Recommendations:** Designing and implementing a preoperative educational program for mothers about effect of ptosis surgery on quality of life and psychosocial function of their children to decrease mothers' anxiety and improve coping mechanisms of mothers during their children surgical journey.

Key words: Mothers, Knowledge, Practices, Children, Ptosis Surgery.

Introduction

The eyelids are one of the most delicate and complex structures. Eyelids are mobile tissue curtains placed in front of the eyeballs. These act as shutters protecting the eyes from injuries and excessive light. These perform an important function of spreading the tear film over the cornea and conjunctiva and also help in drainage of tears by lacrimal pump system. No less important is the aesthetic role in facial rejuvenation and cosmesis (**Lim et al., 2024).**

Each eyelid is divided by a horizontal furrow (sulcus) into an orbital and tarsal part. When the eye is open, the upper lid covers about one-sixth of the cornea and the lower lid just touches the limbus. Proper diagnosis and management of eyelid disorders, both functional and cosmetic, hinge upon a thorough understanding of the location of critical eyelid structures and the anatomic relationships between them (**Kwaśniewska et al., 2024).**

Ptosis in Greek means falling, it can be also known as blepharoptosis, upper eyelid ptosis or droopy eyelid. It is refers to an abnormally inferior displacement of the upper eyelid margin from the primary position. Moreover, when the

upper eyelid extends 3 mm or more from the center of the pupil. If severe enough and left untreated, the drooping eyelid can cause other conditions, such as amblyopia or astigmatism, so it is especially important to treat the disorder in children before it can interfere with vision development. Ptosis is among the most common disorders of the upper eyelid encountered in both optometric and ophthalmic practice. The drooping can affect one or both eyes **(Khurana, 2023).**

Ptosis results from dysfunction of the muscles that control lid retraction, including levator palpebrae superioris (LPS), LPS aponeurosis, and müller's muscle, or the nerve innervates of levator muscle, such as the superior branch of oculomotor nerve and cervical sympathetic system or related to chronic illness such as diabetes mellitus **(Alnosair et al., 2023).**

The main presenting complain of children with ptosis is the visual disturbance related to drooping of the eyelid ranging from mild to severe, which can be unilateral or bilateral along with cosmetic disfigurement, severe redness and dryness of the eyes, severe tearing in the eyes and difficulty seeing, tired or exhausted facial appearance, feeling pain and fatigue around the eyes due to repeatedly raising the eyebrows to be able to see and the child's tendency to tilt his head back to be able to see. Ptosis may accompany with some other problems depending upon the aetiology **(Song et al., 2021).**

Children with ptosis can be managed by observation; mild cases that do not affect vision can be monitored with routine ocular follow-up. Non-surgical treatments include patching to cure amblyopia, using glasses to address refractive faults, and using ptosis crutches, or eyeglass frames, to support the eyelid. Children with ptosis frequently need surgery to safeguard the visual axis, restore eyelid function, and enhance their looks **(Thacker et al., 2025).**

The timing of surgical treatment is determined by the severity; if the visual axis is obstructed and there is a risk of amblyopia, urgent surgery is recommended in severe instances. In mild cases, if there are no visual hazards, elective surgery may be postponed until the child is 4–5 years old. This will allow for better assessments and lessen psychosocial worries as the child grows more self-aware. A thorough grasp of the anatomy, accurate preoperative evaluation, and meticulous surgical planning are necessary for successful management **(Abdelbaky et al., 2025).**

The several surgical methods, such as the suspension of the frontalis sling: It connects the eyelid to the forehead muscle using a sling (such as a silicone rod or fascia) and works well when levator function is inadequate. Levator advancement and resection (either anteriorly or posteriorly): used to remove or modify the muscle when levator function is fair to good. Müller's modified Fasanella-Servat method and Putterman's muscular conjunctival resection. The surgical strategy is selected based on the child's situation, the degree of ptosis, and the functionality of the levator muscles. Each of these factors has its own indications, advantages, and disadvantages, requiring a customized approach for every surgical candidate **(Shah et al., 2025).**

The severity, kind, timing, surgical method, and existence of additional eye problems all affect the prognosis. If discovered early, the prognosis is usually favorable, particularly when it comes to preventing amblyopia and addressing functional and cosmetic problems. Early identification and treatment are crucial because pediatric ptosis poses special diagnostic and treatment obstacles. Improvements in surgical techniques and diagnostic methods, such as imaging and

electrophysiological evaluations, have led to better results. Despite these advancements, prompt intervention is still essential to avoiding long-term vision impairment **(Ben et al., 2025).**

Postoperative care includes; Short-Term Care: Clean wound with boiled and cooled water using sterile cotton avoid soap and rubbing for ~10 days, apply antibiotic ointment (e.g., chloramphenicol) to surgical area three times daily for 2 weeks; apply to eye hourly while awake until follow-up, use cold compresses (e.g., chilled sterile saline or gauze) for about 10 minutes every hour during the first day or two to reduce swelling, keep head elevated (e.g., 2–3 pillows) to minimize swelling, prevent strenuous activities, avoiding head-down positions (e.g., bending, certain yoga poses) for about two weeks, avoid getting water or shampoo on the eyelids for the first week, avoid eye rubbing and makeup for several weeks to prevent irritation or wound disruption **(Jeong & Park, 2024).**

Additional Measures: Frost sutures may be used postoperatively to protect the cornea; removed after ~48 hours, along with antibiotic ointment and lubricants. Antibiotic-steroid ointment may be applied on suture lines and in the eye to prevent dryness and lubricating eye drops or ointments help heal exposure keratopathy or dry eye. Follow-up Schedule: First follow-up around 2–7 days post-operative: assess for infection, wound healing, and adjust sutures if needed. Next evaluation at 1–2 weeks: remove sutures (if non-absorbable), monitor bruising/swelling, and assess eyelid position. Further follow-up at 3 months for final assessment of contour, symmetry, and function **(Li & Chen, 2025).**

As primary caregivers, the mother ensure continuity of care, reinforce postoperative instructions, and help the child adapt and heal vital components for both immediate recovery and favourable long-term outcomes. Role of the Mother in Postoperative Care: Administer medications (antibiotic ointment, lubricants) strictly as prescribed. Perform wound care: gently cleanse surgical site using boiled cooled water and sterile cotton to prevent infection, apply cold compresses, maintain head elevation, and help the child avoid physical strain and eye rubbing, monitor for signs of complications (increased redness, discharge, pain, excessive swelling) and contact the surgeon promptly if noted (**Alshammari et al., 2024).**

Additionally, make sure follow-up appointments are attended, understand potential long-term needs (revision surgery, amblyopia therapy, spectacle correction), offer emotional support, reassure, and cultivate patience as the swelling and full healing may take weeks or months, protect the operated eye during sleep (e.g., moisture shield or artificial tears) if eyelid closure is incomplete, and encourage adherence to amblyopia treatments (e.g., patching, glasses) (**Sun et al., 2025).**

Nurses play a fundamental role in the comprehensive care of children undergoing ptosis surgery across the preoperative, intraoperative, and postoperative phases. Preoperatively, nurses are responsible for preparing the child and family for surgery through health education, psychological support, and pre-surgical assessments. This includes explaining the surgical procedure, addressing parental concerns, ensuring adherence to preoperative instructions, and assessing the child's physical and emotional readiness for surgery **(Chen et al., 2025).**

During the intraoperative phase, nurses contribute to maintaining a safe surgical environment by assisting the surgical team, ensuring strict adherence to aseptic techniques, and monitoring the child's vital signs to prevent

complications. Their role is essential in promoting child safety and minimizing surgical risks **(Hasbi et al., 2024).**

Postoperatively, nurses provide continuous monitoring of the child's condition, including pain assessment, wound care, and early detection of complications such as infection, edema, bleeding, or visual disturbances. They administer prescribed medications, support comfort measures, and assist in promoting recovery. Additionally, nurses play a key role in educating parents or caregivers about postoperative care, including eye hygiene, medication administration, activity restrictions, and follow-up appointments **(Berar et al., 2025).**

Significance of the study

Ptosis is abnormally low positioned upper eyelid, which can decrease or even occlude the vision completely. Ptosis is classified into congenital or acquired in origin based on the age of presentation. It may be minimal, moderate or severe covering the pupil entirely. Ptosis can affect one or both eyes. Proper management requires recognizing the exact etiology and treats it accordingly, whether surgically or medically, to improve outcome. It poses a significant functional and psychosocial impact on the child and is cosmetically alarming to both the child and the parents **(Yavuz et al., 2023).** According to the statistical report from Benha University Hospital the children diagnosed with ptosis from September 2024 to September 2025 was 176 cases **(Statistical Center of Benha University Hospital, 2025).**

Aim of the Study

This study aims to assess of mothers' knowledge and practices regarding care of their children undergoing ptosis surgery.

Research Questions

1- What is the studied mothers' knowledge regarding ptosis and ptosis surgery?
2- What is the studied mothers' reported practices regarding ptosis surgery?
3- Is there a relation between the studied mothers' knowledge and their socio-demographic characteristics?
4- Is there a relation between the studied mothers' reported practices and their socio-demographic characteristics?
5- What is the correlation between the studied mothers' knowledge and reported practices regarding ptosis surgery?

Subjects and Method

Subjects and method of the current study were discussed under the following four designs:

I. Technical design
II. Operational design
III. Administrative design
IV. Statistical design

I-Technical Design:

The technical design of the current study included: research design, setting, subjects as well as tools of data collection.

A-Research Design:

A descriptive research design was utilized to carry out this study.

B- Research setting:

This study was conducted in Ophthalmology Clinics of Benha University Hospital which is one of the main Governmental Hospitals in Qalyubia Governorate, affiliated to Ministry of Higher Education and Scientific Research. The ophthalmology clinics of Benha University Hospital is on the ground floor of the ophthalmology building, which consists of two sides. The right side consists of 6 rooms for ultrasound, fundus examination, vision examination, surgical examination and post-operative follow-up, and a classroom for ophthalmologists. The left side consists of two rooms for vision examination and prescription

eyeglasses. The setting has a large number of children undergoing ptosis surgery attending for management and follow-up.

C- Research subjects:

A simple random sample of (140) mothers and their children from 3 to 18 years old undergoing ptosis surgery were included in this study who attended the previously mentioned setting for follow up and willing to participate in the study.

- Sample size calculation:

The sample size calculated through the Slovin's formula

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

Where:

n = number of subjects

N = total population (215)

e = margin of error (0.05)

Tools of data collection:-

Two tools were used to collect the data in this study:

Tool (I): A structured interviewing questionnaire: It was developed by the researcher and revised by supervisor staff, based on reviewing related literatures and it was written in a simple clear Arabic language. It consisted of four parts to assess the following:

Part 1: Socio-demographic characteristics related to mothers involved in the study. It included 6 closed ended questions.

Part 2: Characteristics related to children involved in the study. It included 6 closed ended questions.

Part 3: Medical history of the studied children. It included 8 questions.

Part 4: Mothers' knowledge regarding care of their children undergoing ptosis surgery, it consist of two sub parts;

A) Mothers' knowledge regarding ptosis in children, it included 10 questions.

B) Mothers' knowledge regarding ptosis surgery in children, It included 13 questions.

Scoring system for mothers' knowledge regarding care of their children undergoing ptosis surgery:

Scoring system was graded according to the questions number of questionnaire that equal 23 question. The scoring system for the studied mothers' knowledge regarding care of their children undergoing ptosis surgery was calculated as follows (2) score for complete correct answer, (1) score for incomplete correct answer and (0) for wrong answer or don't know. The score of the knowledge questions was summed-up and the total divided by the number of the questions, which converted into a percent score. The total knowledge scores were calculated and ranged from (0-46) which further categorized:

- **Adequate** → if the total score of knowledge was ≥75% (≥35 point).
- **Average**→ if the total score equals 60% - < 75% (27-34 point).
- **Inadequate** → if the total score was < 60% (<27 point).

Tool (II): Mothers' reported practices regarding care of their children undergoing ptosis surgery: It was designed by researcher adapted from **(Crum & Gensure, 2021) and (Gwenhure & Shepherd, 2019).** To assess mothers' reported practices towards care of their children undergoing ptosis surgery, It included mother's actual practices regarding their children undergoing ptosis surgery such as; reported practice of hand washing, eye care, wound care, eye drop application, ointment application and oral antibiotic administration.

The practices include six main skills which involves;

Mothers' reported practice of hand washing towards care of their children undergoing ptosis surgery (9 items).

- Mothers' reported practice of eye care towards care of their children undergoing ptosis surgery (17 item).
- Mothers' reported practice of wound care towards care of their children undergoing ptosis surgery (28 item).
- Mothers' reported practice of eye drop application towards care of their children undergoing ptosis surgery (22 item).
- Mothers' reported practice of ointment application towards care of their children undergoing ptosis surgery (17 item).
- Mothers' reported practice of oral antibiotic administration towards care of their children undergoing ptosis surgery (14 item).

Scoring system for mothers' reported practice:

Scoring system was graded according to the steps of practices in questionnaire that equal 107 step. The scoring system for mothers' reported practice was calculated as (1) score for done and (0) for not done. The score of reported practice steps was summed-up and the total divided by the number of the steps, which converted into a percent score. The total mothers' reported practice scores were calculated and ranged from (0-107) which further categorized:

- **Satisfactory**→ if the total score of lifestyle pattern was ≥ 75% (≥80 point).
- **Unsatisfactory**→ if the score was < 75% (< 80 point).

II- Operational design:

The operational design included: preparatory phase, tools validity and reliability, pilot study, ethical and legal considerations, and field work.

Preparatory phase:

Preparation of the study design and data collection tools was based on extensive review of the current and past available national and international references related to the research title, using a journal, textbooks and internet search to contrast the tools. This was necessary for the researcher to be acquainted with and oriented about aspects of the research problem as well as to assist in the development of data collection tools.

Content validity of the tool:

The tools validity was done by three members Faculty's Staff Nursing-Benha University; Two Experts from the Pediatric Nursing Specialties & One Community Health Nursing Specialties who reviewed the tools for clarity, relevance, comprehensiveness, applicability and easiness for implementation and according to their opinion minor modifications were carried out, which involves re-arrange some questionnaire items and add some items.

Reliability of the tool:

Reliability of the tool was applied by the researcher for testing the internal consistency of the tool, reliability of the developed tools was estimated by using Cronbach's alpha coefficient test to measure the internal consistency of the study tools, which revealed that each of the two 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, while reported practice were 0.89.

Pilot study:

A pilot study was carried out to ascertain the clarity and applicability of the study tools representing 10% of total study subjects. The pilot study was conducted on 14 mother. The pilot study was aimed to test the content, clarity, applicability and simplicity of the tool using the interviewing questionnaire. The estimation of the time needed to fill the questionnaire about 30-45 minutes. No modifications were done, so the pilot study sample was included in the study main subjects.

Ethical considerations:

Written approval consent from the Scientific Research Ethical Committee, Faculty of Nursing, Benha University was obtained. Also approval and informed written consent has been obtained from all studied mothers before conducting the study and given them a brief orientation to the purpose and nature of the study. Mothers were also reassured that all information gathered would be confidentially and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. The mothers had right to withdraw from the study at any time without giving any reasons. Ethics, values, beliefs and culture were respected. The data collected were stored in confidential manner.

Field work

The actual field work of the current study took about six months starting from the beginning of July 2024 to the end of December 2024 in the previously mentioned setting according to policy of the study setting. The researcher came to the study setting three days weekly Tuesday, Wednesday and Thursday of each week (from 9:00 AM to 1:00 PM Tuesdays and Thursdays & from 1:00 PM to 5:00 PM Wednesdays), because these days coincide with appointments of mothers and their children undergoing ptosis surgery, and also these days suitable for the researcher's appointments. Average number of mothers were 2-4 mothers/day. All the mothers were cooperative with the researcher. The researcher interviewed each mother individually, starting by introducing herself to the mothers, providing brief idea about the current study and its outcomes, and took their approval to participate in the study prior to data collection. The researcher used tool (I) to assess personal characteristics of the studied mothers and their children, and medical data of children was obtained from Childs' medical file. Additionally, this tool used to assess mothers' knowledge about ptosis and ptosis surgery. While the researcher used tool (II) to assess mothers' reported practices regarding care of their children undergoing ptosis surgery, each mother took around 30-45 minutes to fill and complete the questionnaires.

III- Administrative design:

An official letter was issued and permission was obtained from Dean of Faculty of Nursing, Benha University concerned the title, objectives, tools, the study technique and an official approval was obtained from administrators of the previous mentioned study setting to carry out the study. A clear explanation was given about the nature, importance and expected outcomes of the study.

IV- Statistical design:

All data collected were organized, tabulated and analyzed using appropriate statistical test. Data were analyzed by using Statistical Package for Social Science (SPSS) version 21 which was applied to calculate frequencies and percentage for qualitative descriptive data, mean and standard deviation was used for quantitative data, as well as test statistical significance and associations by using Chi- square test (x^2) and matrix correlation to detect the relation between the variables (P value).

Significance levels were considered as follows:

- Highly statistically significant $P < 0.001$**
- Statistically significant $P < 0.05$*
- Not significant $P > 0.05$

Results:

Table (1): Shows that; more than half 51.4% of the studied mothers were aged 30 < 40 years with mean±SD was **32.4±8.2.** Regarding educational level; less than third 28.6% of the studied mothers had primary education, almost two thirds 65.7% of them didn't work, slightly less than three fifth 59.3% of them had enough income, more than half

52.9% of them were married, and more than three fifth 62.9% were lived in rural areas.

Table (2): Reveals that; more than half 53.6% of the studied children were aged 3 < 6 years with mean±SD was **6.66±2.71.** Regarding gender; more than half 56.4% of the studied children were males, approximately two fifth 42.1% of them had second ranking between their brothers/sisters, more than half 53.6% of them had nursery school, three fifth 60% of them had a degree of kinship between the parents and half 50% of them was first degree kinship.

Table (3): Illustrates that; more than half 55% of the studied children were aged 3<6 years when diagnosed with ptosis, more than half 52.9% of them had left and right sides of eye affected by ptosis. Regarding diagnostic tests two thirds 66.4% of them had been performed marginal reflex distance to diagnose the child's condition, two thirds 67.1% of them had family members suffer from ptosis, approximately two fifth 46.8% of them were their brother/sister, and two thirds 66.4% of them didn't have eyelid surgeries been performed before.

Figure (1): Clarifies that; approximately two fifth 42.1% of studied children had bilateral congenital ptosis. While, more than fifth 22.9% of them had unilateral acquired ptosis.

Figure (2): Portrays that; more than one fifth 20.7% of the studied mothers had adequate total knowledge level regarding ptosis and ptosis surgery. Less than third 30% of the studied mothers had average total knowledge level regarding ptosis and ptosis surgery. Slightly less than half 49.3% of the studied mothers had inadequate total knowledge level regarding ptosis and ptosis surgery.

Figure (3): Clarifies that; less than third 27.9% of the studied mothers had satisfactory total reported practice regarding care of their children undergoing ptosis surgery. More than two thirds 72.1% of the studied mothers had unsatisfactory total reported practice regarding care of their children undergoing ptosis surgery.

Table (4): Shows that; there were statistically significant relation between the studied mothers' total knowledge level and their educational level and income, while there were no statistically significant relation between the studied mothers' total knowledge level and their age, occupational status, current marital status and place of residence (P>0.05).

Table (5): Illustrates that; there were highly statistically significant relation between the studied mothers' total reported practice level and their educational level (P<0.001). There were statistically significant relation between the studied mothers' total reported practice level and their occupational status and income (P<0.05), while there were no statistically significant relation between the studied mothers' total reported practice level and their age, current marital status and place of residence (P>0.05).

Table (6): Illustrates that; there were highly statistically significant positive correlation between total knowledge level, and total reported practices level among the studied mothers (P<0.001).

Table (1): Distribution of the studied mothers regarding their socio-demographic characteristics (n=140)

Socio-demographic characteristics of the studied mothers	No.	%
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

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

Personal characteristics of the studied children	No.	%
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

Table (3): Distribution of the studied children regarding their medical history (n=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

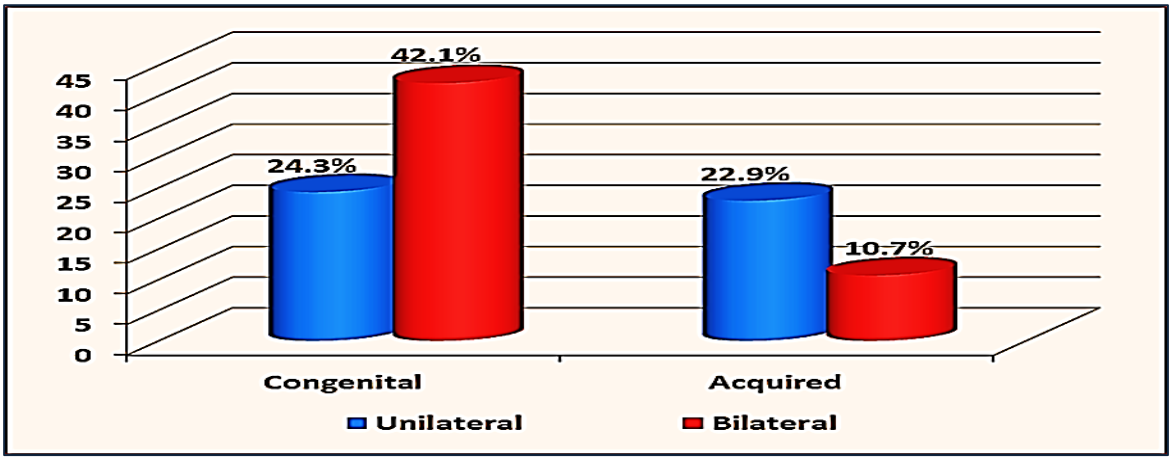

Figure (1): Percentage distribution of the studied children regarding their type of ptosis (n=140).

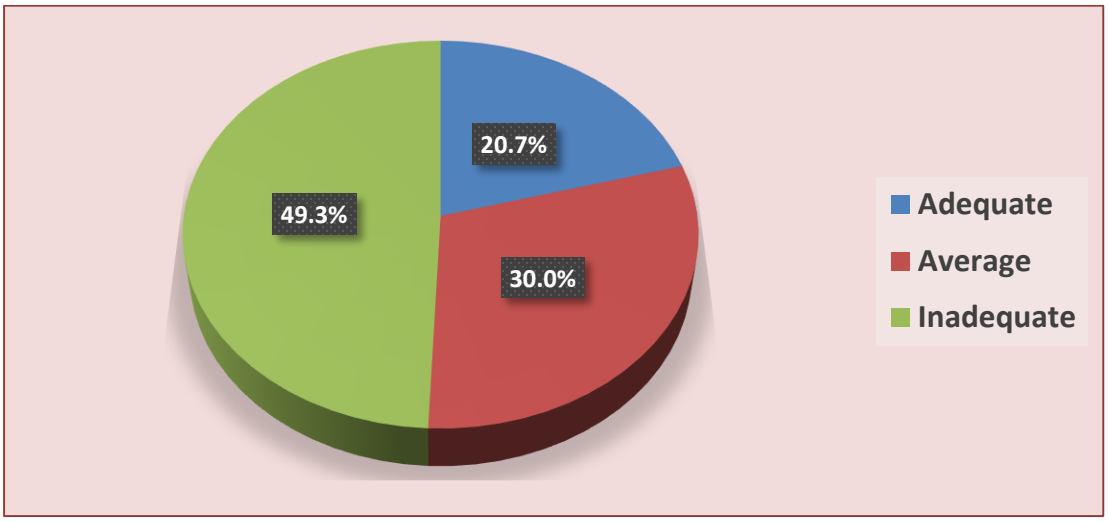

Figure (2): Percentage distribution of the studied mothers' total knowledge level regarding ptosis and ptosis surgery (n=140).

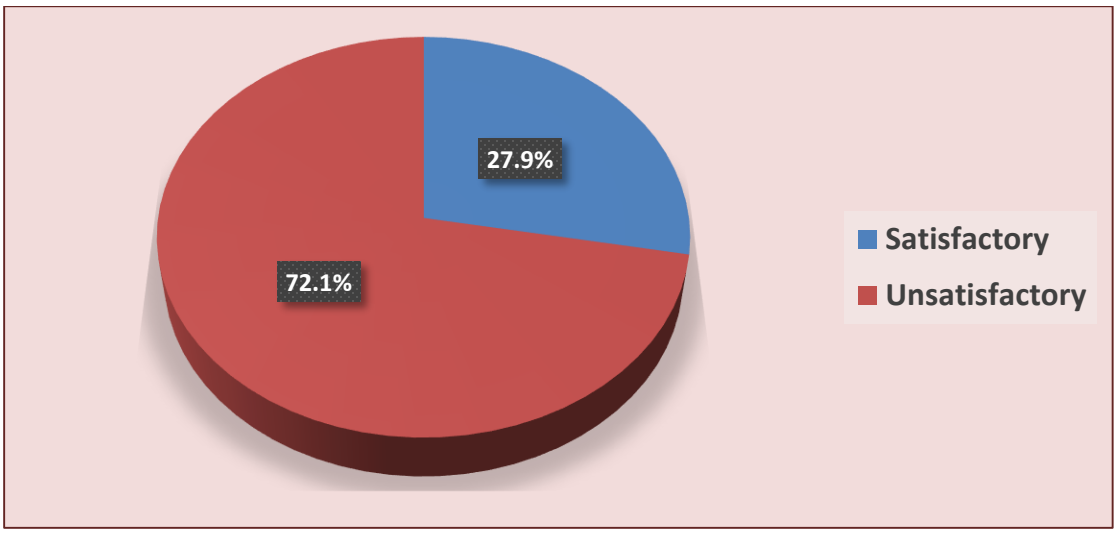

Figure (3): Percentage distribution of the studied mothers' total reported practice regarding care of their children undergoing ptosis surgery (n=140).

Table (4): Statistically relation between total knowledge level and socio-demographic characteristics of the studied mothers (n=140).

Socio-demographic characteristics of the studied mothers	Total knowledge level						X^2	P-value
	Adequate (n=29)		Average (n=42)		Inadequate (n=69)			
	No.	%	No.	%	No.	%		
Age								
>20 years	3	10.4	5	11.9	7	10.1	8.45	.075
20<30 years	7	24.1	10	23.8	16	23.2		
30<40 years	15	51.7	21	50.0	36	52.2		
≥ 40 years	4	13.8	6	14.3	10	14.5		
Educational level								
Can't read and write	1	3.4	3	7.1	7	10.1	17.32	.018*
Read and write	2	6.9	5	11.9	10	14.5		
Primary education	6	20.7	12	28.6	22	31.9		
Preparatory education	3	10.4	4	9.5	6	8.7		
Secondary school education	5	17.2	8	19.0	11	15.9		
Bachelor's	12	41.4	10	23.8	13	18.8		
Occupational status								
Working	12	41.4	15	35.7	21	30.4	4.12	.127
Does not work	17	58.6	27	64.3	48	69.6		
Income								
Enough and save	8	27.6	9	21.4	9	13.0	9.87	.042*
Enough	16	55.2	25	59.5	42	60.9		
Not enough	5	17.2	8	19.0	18	26.1		
Current marital status								
Married	18	62.1	21	50.0	35	50.7	6.54	.088
Divorced	6	20.7	12	28.6	19	27.5		
Widowed	5	17.2	9	21.4	15	21.7		
Place of residence								
Rural	16	55.2	27	64.3	45	65.2	3.21	.201
Urban	13	44.8	15	35.7	24	34.8		

Table (5): Statistically relation between total reported practice level and socio-demographic characteristics of the studied mothers pre and post educational program and at follow-up (n=140).

Sociodemographic characteristics of the studied mothers	Total reported practice level				X^2	P-value
	Satisfactory (n=39)		Unsatisfactory (n=101)			
	No.	%	No.	%		
Age						
>20 years	4	10.3	11	10.9	3.12	.374
20<30 years	10	25.6	23	22.8		
30<40 years	19	48.7	53	52.5		
≥ 40 years	6	15.4	14	13.9		
Educational level						
Can't read and write	1	2.6	10	9.9	19.45	.000**
Read and write	3	7.7	14	13.9		
Primary education	8	20.5	32	31.7		
Preparatory education	6	15.4	7	6.9		
Secondary school education	9	23.1	14	13.9		
Bachelor's	12	30.8	24	23.8		
Occupational status						
Working	18	46.2	30	29.7	6.01	.054*
Does not work	21	53.8	71	70.3		
Income						
Enough and save	15	38.5	11	10.9	9.67	.042*
Enough	20	51.3	63	62.4		
Not enough	4	10.3	27	26.7		
Current marital status						
Married	23	59.0	51	50.5	2.89	.236
Divorced	8	20.5	28	27.7		
Widowed	8	20.5	22	21.8		
Place of residence						
Rural	17	43.6	38	37.6	0.72	.396
Urban	22	56.4	63	62.4		

Table (6): Correlation between total knowledge level, and total reported practice level among the studied mothers (n=140).

Items	Total knowledge level	
	r	p-value
Total reported practices	0.71	.000**

Discussion

In order to avoid the development of visual impairments such amblyopia, refractive errors, and astigmatism, early treatment of ptosis is crucial. In order to repair children's drooping eyelids, pediatric ptosis surgery is a crucial intervention. Depending on the degree of ptosis and the levator function, several surgical techniques may be required. These processes can be carried out individually or as a single, integrated approach. **(Khan et al., 2023).**

The post-operative care given by parents, especially mothers, is crucial to the effectiveness of such surgeries, which go well beyond the operating room. In order to avoid difficulties and guarantee the best possible recovery, mothers' performance and competence in handling post-surgical care are crucial. **(Wang, 2023)**. By offering continuous education and support, nurses empower mothers to confidently care for their children, thus reducing the risk of complications and improving the overall success of the surgery **(Banerjee et al., 2025)**. Therefore**,** the present study aimed to assess mothers' knowledge and practices regarding care of their children undergoing ptosis surgery.

Regarding personal characteristics of the studied mothers, the current study revealed that more than half of the studied mothers 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 regarding their children's health.

This result was supported by **Hasbi et al., (2024)** whose study in Malaysia was entitled "Evaluation of the Effect of Surgery on Psychosocial Function and Quality of Life in Children with Simple Congenital Ptosis and Their Parents," as they found that the largest proportion of the studied mothers aged 31–40 years old. In contrast, a study conducted by **Almogbel et al., (2023)** under the title "Parents' awareness and attitude toward pediatrics eye diseases in Makkah, Saudi Arabia: a cross-sectional study" reported that the highest percentage of the studied mothers aged from 36 to 45 years old.

Moreover, the present study reflected that almost two thirds of the studied mothers didn't work. This can be explained by a combination of socio-economic and cultural determinants that affect mothers' participation in the workforce. Mothers may choose not to work or may be unable to work due to family responsibilities, such as caring for young children or managing household duties. In the same scene, **Abd Elhady et al., (2023)** who studied "Knowledge and Practices of Mothers regarding their Children with Eye Trauma" in Egypt, found that a significant proportion of mother were housewives. On the other hand, a study performed by **Khattak et al., (2023),** under the title "Knowledge, Practice and Attitude of Mothers for Ophthalmic Problems in Children in Rural Areas-A Cross-Sectional Study: Ophthalmic Problems in Children in Rural Areas," in Pakistan, reported that less than half of the studied mothers were not working.

Additionally, the current study clarified that slightly less than three fifth of the studied mothers had enough income. This may be due to the fact that a substantial proportion of the mothers in the study had sufficient financial resources, allowing them to afford the medical costs associated with their children's ptosis surgery. This result reflects a certain level of economic stability or access to financial support, enabling these mothers to prioritize their children's healthcare needs.

This result was in accordance with a study conducted by **Almogbel et al., (2023)** who noticed

that slightly more than half of the studied participants had sufficient monthly income. In the opposite side, a study performed by **Khan et al., (2023)** about "Awareness of parents regarding eye diseases and eye care needs among children of Tehsil Babuzai, District Swat," in Pakistan, found that about three fifths of the studied respondents had not enough monthly income.

Furthermore, the current study indicated that more than half of the studied mothers were married and more than three fifth of them were lived in rural areas. In the same line, a study conducted by **Alshammari et al., (2024)** about "Levels of awareness regarding pediatric eye diseases among Saudi parents from the Hail and Al-Qassim regions, Saudi Arabia," reported that majority of the studied subjects were married. This finding was congruent with a study carried out by **El-Maghawry et al., (2022)** who performed a study entitled "Effect of Designed Guidelines for Mothers regarding Care of their Children with Ophthalmological Trauma," in Egypt and observed that around two thirds of the studied mothers were married and were rural residents, respectively.

As for personal characteristics of the studied children, the present study displayed that more than half of the studied children were aged from 3 to less than 6 years old with mean ±SD was 6.66±2.71 years. This may be attributed to the fact that ptosis surgery is typically performed during early childhood, especially when the condition begins to affect the child's vision or ability to engage with their surroundings. Also, this age is a common period for diagnosing and treating ptosis, as any visual impairment during these formative years can hinder a child's development and learning.

Aligned with this finding, a study performed by **Paulos et al., (2024)** under the title "Management of congenital blepharoptosis in pediatric patients," in Chile, found that the average age of the studied children was 7.7 years old ± SD 4.7 years. In contrast, a study conducted by **Ghiam et al., (2023),** published as "Surgical outcomes after frontalis suspension using expanded polytetrafluoroethylene sling for congenital ptosis," in USA reported that the mean age of the studied participants was 2.3 years (standard deviation: 2.2 years).

Additionally, the present study clarified that more than half of the studied children were males. This may be attributed to the fact that ptosis is more commonly observed in males, as some studies suggest that congenital ptosis tends to be more prevalent in boys. The anatomical and genetic factors influencing eyelid development may contribute to this gender difference, leading to higher incidence of ptosis in male children.

This finding matched with a study in China carried out by **Ma et al., (2022)** which is titled "Application of e-PTFE frontalis suspension in the treatment of congenital ptosis in children," and found that more than half of the studied children were males. Conversely, a study conducted by **Hasbi et al., (2024)** entitled "Evaluation of the Effect of Surgery on Psychosocial Function and Quality of Life in Children with Simple Congenital Ptosis and Their Parents," found that more than half of the studied children were females.

Furthermore, the present study portrayed that approximately two fifths of the studied children were the second ranking between their brothers/sisters, and more than half of them were at nursery school. In the same line, **Sayed et al., (2021)** who carried out a study published as "Effect of Health Educational Program on Mothers' Knowledge and Practices Regarding Care of Children with Trachoma," in Egypt, found that more than half of children were between two to four in the family ranking and more than two thirds of them had nursery education. Likewise, a study

conducted by **Mohamed et al., (2024)** which is called "Effect of Instructional Guidelines on Mothers' Knowledge and Practice regarding Conjunctivitis among Children in Ophthalmology Outpatient Clinic," noticed that more than two thirds of children were the second child and were at preschool, respectively.

Moreover, the current study indicated that three fifth of the studied children had a degree of kinship between the parents and half of them was first degree kinship. This may be due to the genetic factors that contribute to the development of ptosis, which can be more prevalent in families with a closer degree of kinship. This result was compatible with **Khalili et al., (2022)** who conducted a study under the title "Consanguinity and Increased Risk of Congenital Ptosis: A Case–Control Study from Southern Iran," which emphasized that more than half of parents of the cases with congenital ptosis were relatives and the highest percentage of them were first cousin.

Also, this result was partially agreed with a study carried out by **Aishwarya et al., (2024)** entitled "Study on various ocular congenital anomalies and its association with consanguineous marriage," which found that parents' consanguinity was present in more than more of the studied cases and among these cases with consanguineous parents, half of them had 2nd-degree consanguinity.

As regard medical history of the studied children, the present study showed that more than half of the studied children were aged from 3 to less than 6 years old when diagnosed with ptosis. This may be reflect the fact that ptosis is often diagnosed in early childhood when visual development and sensory processing are critical. The age range of 3 to less than 6 years old corresponds to a developmental period when any visual impairment, as ptosis, becomes more noticeable and potentially disruptive to a child's learning and interaction with their environment.

Parallel with this result, a study carried out by **Sun et al., (2025)** under the title "Ocular biological characteristics and refractive errors in children with unilateral congenital ptosis," reported that mean age at diagnosis was 4.7 (.09 – 18.9) years old. On contrary, a study conducted by **Ripa et al., (2022)** which is named "Association of Eyelid Disorders and Ocular Motility Disorders in Pediatric Age: an Epidemiologic Analysis. A Multicenter Retrospective Study," reported that the mean age children when they were diagnosed with ptosis was 2 [1 – 6] years old.

Additionally, the current study represented that approximately two fifths of the studied children had bilateral congenital ptosis. This may be due to the fact that bilateral congenital ptosis is a common presentation of the condition. Also, this result could reflect the hereditary nature of the condition, where both sides of the face are equally impacted.

In this context, **Assadi et al., (2021)** carried out a study published as "Effect of congenital ptosis correction on corneal topography-A prospective study," in India and declared that the largest portion of children had bilateral congenital ptosis. This result was incongruent with a study carried out by **Prabha & Padma, (2023),** who conducted a study entitled "Congenital ptosis-A clinical and demographic study in a tertiary eye care hospital," in India and reported that less than three quarters of the studied respondents were unilateral and involvement of Left eye was predominant at rate of about three fifths.

Furthermore, the current study showed that about two thirds of the studied children had been performed marginal reflex distance to diagnose the child's condition. This may be due to marginal reflex distance (MRD) being a standard, quick, and

non-invasive measurement that objectively quantifies eyelid position relative to the corneal light reflex, making it ideal for pediatric ptosis assessment.

In this concern, a study in China, conducted by **Ji et al., (2025),** entitled "Efficacy and Safety of Conjoint Fascial Sheath (CFS) Suspension in the Treatment of Blepharoptosis: A Systematic Review and Meta-analysis," affirmed that change in marginal reflex distance was used for most of the studied participants as a primary endpoint, which is reinforcing its central role in diagnosis and follow-up. Consistently, a study in China conducted by **Liu et al., (2022)** which is called "Refractive error characteristics and influence on ocular parameters in patients with unilateral congenital ptosis," stated that marginal reflex distance is described as the primary clinical measurement to quantify ptosis and to grade severity.

Moreover, the current study represented about two thirds of the studied children had family members suffered from ptosis, and more than two fifths of them were their brother/sister. This may stem from the hereditary nature of many congenital ptosis cases, where autosomal inheritance with variable expressivity leads to clustering within families and particularly among first-degree relatives. In the same line, a study carried out by **Ripa et al., (2022)** noticed that three fifths of the studied cases had ptosis family history and the highest portion of them had brother or sister with ptosis. Also, this result contradicted with a study performed by **Prabha & Padma, (2023)** who found that family history of congenital ptosis was present in only less than one fifth of cases.

In addition, the current study demonstrated that about two thirds of the studied children hadn't eyelid surgeries been performed before. This may be due to common clinical practice to delay ptosis surgery until a child is old enough for safer anesthesia, stable measurements, and clearer assessment of levator function. In addition, parental hesitancy, limited access to pediatric oculoplastic services, financial barriers, and waiting lists can postpone intervention. These may be factors that make it likely that a substantial proportion of children had not undergone any prior eyelid surgery.

This result agreed with a study in China conducted by **Ma et al., (2022)** entitled "Application of e-PTFE frontalis suspension in the treatment of congenital ptosis in children," and noted that most of the studied children not having had previous eyelid procedures. On contrary, **Diab et al, (2023)** who carried out a study in Egypt published under the title "Combined levator and frontalis muscle advancement flaps for recurrent severe congenital ptosis," report substantial prior eyelid surgery among the studied patients.

As regards the studied mothers' total knowledge level regarding ptosis and ptosis surgery, the present study indicated that slightly more than one fifth of the studied mothers had adequate total knowledge level, while slightly less than half of them had inadequate total knowledge level. This may be related to the studied mothers' educational level. This results came inconsistent with the study by **Khan et al. (2023),** titled "Awareness of parents regarding eye diseases and eye care needs among children of Tehsil Babuzai, District Swat," found that less than half of the mothers surveyed possessed adequate knowledge about childhood eye diseases.

As for the studied mothers' total reported practice regarding care of their children undergoing ptosis surgery, the current study indicated that less than third of them had satisfactory total reported practice. As well, more than two thirds of them had unsatisfactory total reported practice. This may be due to insufficient clear, hands-on training.

This result was similar to **Abd-El Naby et al., (2025)** who in their study "Health Educational Program for Mothers regarding Care of their Children with Retinoblastoma" found that less than half of the studied mothers had satisfactory total practices level.

According to the relation between total knowledge level and socio-demographic characteristics of the studied mothers, the current study showed that there were statistically significant relations with their educational level and income, while there were no statistically significant relations with their age, job status, current marital status, and place of residence. This can be interpreted as mothers with higher education are more likely to have stronger health literacy skills, enabling them to comprehend medical explanations, ask relevant questions, and apply information effectively in caregiving situations. Similarly, families with sufficient income may have better access to healthcare services, resources, and educational materials, which can enhance learning outcomes.

This result partially agreed with the study by **Sayed et al., (2021),** "Effect of Health Educational Program on Mothers' Knowledge and Practices Regarding Care of Children with Trachoma," which noticed that there were statistically significant relationships between total knowledge scores of the studied mothers' and their residence, educational levels, and monthly income, while there were statistically significant relationships with their residence, educational levels, and occupation.

As for the relation between total reported practice level and socio-demographic characteristics of the studied mothers, the present study indicated that there were highly statistically significant relations with their educational level. Also, there were statistically significant relations with their job status and income, while there were no statistically significant relations with their age, current marital status, and place of residence.

This may stem from the fact that mothers with higher educational levels are more likely to understand, retain, and implement proper caregiving practices following ptosis surgery. Similarly, mothers with better job status and higher income may have more access to healthcare resources, time flexibility, and supportive environments, all of which facilitate the correct application of post-surgical care procedures. These factors contribute to consistent improvements in reported practice across the educational program phases.

In the same line, the study performed by **Farag (2021),** "Effect of Educational Training Program on Mothers Knowledge and Practice and Clinical Outcomes for Infants with Congenital Nasolacrimal Duct Obstruction," observed that there were statistically significant relations between the studied mothers' level of practice and their educational level. In contrast, a study from Saudi Arabia by **Aldhabaan et al., (2022),** "Knowledge and practices of child eye healthcare among parents in Aseer Region, Saudi Arabia," reported that there was a statistically significant association between parents' practice and their age and marital status.

Concerning the correlation between total knowledge level, and total reported practice level among the studied mothers, the present study displayed that there was a highly statistically significant positive correlation between total knowledge level, and total reported practice level among the studied mothers. This may be attributed to the interdependent relationship between

knowledge, and practice in the context of health education.

This result was supported by **Mohamed et al., (2024)** in their study entitled "Effect of Instructional Guidelines on Mothers' Knowledge and Practice regarding Conjunctivitis among Children in Ophthalmology Outpatient Clinic," which declared that the mothers under study's total knowledge and practice scores regarding their children with conjunctivitis were positively and significantly correlated at pre and post the instructional guidelines. Also, this finding was compatible with the results of a study by **Khattak et al., (2023)** under the title "Knowledge, Practice and Attitude of Mothers for Ophthalmic Problems in Children in Rural Areas-A Cross-Sectional Study" who observed that parents' knowledge of ophthalmic problems significantly correlated with their practice.

Conclusion

More than one fifth of the studied mothers had adequate total knowledge level regarding ptosis and ptosis surgery. Regarding studied mothers' total reported practice level, less than third of the studied mothers had satisfactory total reported practice regarding care of their children undergoing ptosis surgery. There were highly statistically significant positive correlation between total knowledge level, and total reported practice level among the studied mothers.

Recommendations

1. Designing and implementing a preoperative educational program for mothers about effect of ptosis surgery on quality of life and psychosocial function of their children to decrease mothers' anxiety and improve coping mechanisms of mothers during their children surgical journey.
2. Continuous educational program for the mothers caring for their children undergoing ptosis surgery recommended to improve their knowledge, attitude and reported practice regarding care of their children and to achieve appropriate outcomes for a long time.
3. Appropriate counseling and educational guidelines should be provided for mothers caring for their children undergoing ptosis surgery to improve their awareness regarding any health problems that possibly might occur and ways of prevention.
4. Conducting a structured nursing intervention program for increasing the mothers' awareness regarding the essential lifestyle pattern modifications following the ptosis surgery that helps them to achieve more sustainable health outcomes.
5. Replicating the current study with a larger probability sample is advised to ensure generalizability and wider use of the designed method.

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