

Effectiveness of a Video-Assisted Education Program about Discharge of Preterm Infants on Mothers' Readiness and Their Self-Confidence

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ABSTRACT

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Background: A video-assisted discharge education program for preterm infants guarantees optimal practices and assists mothers in receiving the right kind of care. **Aim:** To evaluate the effectiveness of a video-assisted education program about the discharge of preterm infants on mothers' readiness and self-confidence. **Design:** The research study design was quasi-experimental. A suitable sample of 60 mothers with preterm infants was gathered from the neonatal critical care unit at Al-Azhar Damietta Hospital. **Tools:** Socio Demographic Characteristics Sheet, Pharis Self-Confidence Scale (PSCS), and Readiness for Discharge Scale for mothers and preterm infants were used. **Results:** There was a highly statistically significant difference in the total mean score of the Pharis self-confidence scale (PSCS) and the scale for the readiness of the mother in the study group who received the video-assisted discharge education than the control group who received routine care. **Conclusion:** According to the study's findings, mothers who participated in a video-assisted discharge guide program had greater self-confidence and preparedness than those in the control group. **Recommendations:** To mothers' readiness and self-confidence for preterm infants at home, neonatal nurses should incorporate video-assisted instruction into routine NICU discharge planning.

Keywords: A Video-Assisted Discharge, Education Program, Mothers' readiness, Mothers' self-confidence, Preterm infants.

INTRODUCTION

A preterm infant induces stress in parents. The World Health Organization (WHO) defines a preterm infant as “one born prior to 37 weeks of gestation, calculated from the first day of the last menstrual period”. WHO estimates that 13.4 million were born prematurely in 2020. This represents over 10% of infants. In 2019, approximately 900,000 children died due to complications arising from preterm birth. Prematurity is the main cause of mortality among children under 5 years of age worldwide (Ohuma et al., 2023).

To receive critical care and medical assistance after birth, the majority of preterm infants must stay in the neonatal intensive care unit (NICU) for a few days to many months. However, after leaving the NICU, they are likely to have trouble eating and run the danger of contracting infections, metabolic illnesses, apnea, bradycardia, and other conditions that could require them to return to the hospital. (Perin et al., 2022).

According to WHO research, the leading reasons of morbidity and mortality of infant survivors are preterm with “low birth weight” (35%), “birth asphyxia” (20%), “sepsis” (15%), “pneumonia” (6%), “congenital abnormalities” (9%), and other reasons, such as “diarrhea” (5%). Therefore, the WHO emphasized that to reduce infant death and morbidity, basic care such as warming and infection prevention is essential (Arwehed et al., 2024).

Pediatric nurses provide women with information on how to bathe, feed, and avoid infections before newborns are released from the hospital, but no video education method demonstration is planned to educate them. Therefore, the researchers believe it is necessary to use a video training method to improve mothers' knowledge and practices in the care of their preterm infants. This research will enhance mothers' self-confidence and improve their knowledge and practices while promoting the health and survival of their preterm infants (Lyngstad et al., 2022).

Primary caregiving shifts from medical professionals to the mother after discharge, which presents difficulties for the mother who is inexperienced in caring for

preterm infants. By enhancing mothers' understanding and proficiency in caring for preterm infants and enhancing their preparedness for discharge, hospital staff, especially pediatric nurses, can facilitate a seamless transfer (Vergales et al., 2022). On the day of their preterm infant's departure, the majority of mothers show little preparation or confidence in their ability to adjust to their new role as the primary caregiver. This could lead to longer hospital stays, more post-discharge challenges, and greater readmission rates (Hägi-Pedersen et al., 2021).

Increased care, knowledge, and confidence among mothers may result from a video-assisted discharge education program about the care of preterm newborns. Therefore, providing moms with a video-assisted educational program in this field is crucial. So, the video-assisted method raises mothers' knowledge, practices, and self-confidence of her own, raises her infants' wellness, improving overall quality of life and lowering the newborn death rate (Chou et al., 2020).

A video-assisted discharge education program allows physiologically stable infants to be discharged with tube feeding at home, gradually reaching full oral feeding. The education program usually offers follow-up with dedicated personnel until the feeding tube is no longer required, and weight gain is adequate. With A video-assisted discharge education program, mothers can adjust to caring for their preterm infants in a natural home environment and their social and daily lives (Shamsi et al., 2023).

These hazards may be decreased with careful discharge planning and effective post-discharge follow-up. It takes time for high-risk infants' families to gather community resources, get the support services they need, and get ready to care at home. Babies' survival is in the hands of their mothers and families; thus, they must understand the kind of care their baby requires, as this affects their chances of survival as well as their ability to grow and develop normally (Mahdian et al., 2021).

Significance of the study

Preterm babies have a significant rate of illness and mortality throughout the neonatal era. This goes beyond the early birth and length of hospitalization to the readmission rates of late preterm newborns (1.5–3 times that of term infants). Feeding issues, stunted growth, and infection frequency are the main causes of readmission for this population group (Amsalu, et al, 2022). El-Hadary et al. (2020) suggested that in Egyptian NICU settings, there is a vital need for discharge education plans for mothers that incorporate elements of family-centered care as maternal collaboration and educational programs. Therefore, this study aimed to evaluate the effectiveness of a video-assisted education program about the discharge of preterm infants on mothers' readiness and their self-confidence. Amsalu, et al (2022).

THE AIM OF THE STUDY

To evaluate the effectiveness of a video-assisted education program about the discharge of preterm infants on mothers' readiness and their self-confidence.

Research Hypotheses:

Hypothesis I (H₁): Mothers who receive a video-assisted discharge education are expected to have higher discharge readiness of their preterm infants than mothers who receive routine care.

Hypothesis II (H₂): Mothers who receive a video-assisted discharge education are expected to have higher self-confidence than mothers who receive routine care.

SUBJECTS AND METHOD

Research Design

This quasi-experimental study design, which involved study and control groups with pre-post-intervention observations for both groups, was utilized. The researchers conducted an in-person pre-discharge education session with the study group. The teaching was assisted via a structured, straightforward video that contained vital information regarding home-based premature newborn care, and the researchers had demonstrated a hands-on interactive training intervention. The assigned staff nurse provided the control group with standard care, including regular education and training.

Setting

The present study was carried out at the NICUs of Al-Azhar Damietta Hospital, which is affiliated with the Ministry of Higher Education and Scientific Research. The unit is divided into 6 rooms: “admission”, “isolation”, “preterm care”, “respiratory problems”, “jaundice”, and “pre/postoperative care room”.

Subjects:

Following a thorough description of the study's goal and methodology, 60 mothers with their 60 preterm infants (30 study group and 30 control group) voluntarily consented to take part in it with their preterm infants who were in the NICU of El Azahar Hospital in New Damietta City.

- **Inclusion criteria:** Preterm Infants who are under 38 weeks of gestation, free of congenital conditions, and free of serious problems.
- Mothers' requirements to be eligible: they had to be free from postpartum issues, have no trouble going to the NICU, be able to use a smartphone and a WhatsApp account, and provide their agreement for any necessary follow-up home visits.

Sample Size

The sample size was calculated using the Centers for Disease Control and Prevention's (CDC) Epi Info™ statistical software, version 7.2, based on the following parameters: 80% power ($1 - \beta$), a 95% confidence level, a 2.5% margin of error (D), an anticipated prevalence of 10%, and a minimum acceptable prevalence of 25%. These inputs indicated that a minimum of 60 participants equally divided into two groups (30 mothers in the study group and 30 in the control group) was sufficient to detect significant differences between groups and account for potential non-responses.

Assignment to groups: The study sample was divided into groups on a random basis from a total of 60 mothers and their premature infants. Preterm infants who met the study inclusion criteria and were admitted at the NICU on Saturday, Monday, and Wednesday were placed in the control group, which received routine care upon discharge, while the study group, which received the video-assisted discharge program, was assigned to preterm infants who were admitted at the NICU on Sunday, Tuesday, and Thursday.

Tools for Data Collection

After a massive review of the related national/international studies, the following tools were used:

Tool I: Socio-Demographic Characteristics Sheet:

Part 1: Socio-demographic characteristics of studied mothers, such as age, level of education, occupation, monthly income, and mode of delivery.

Part 2: Socio-demographic characteristics of preterm infants, such as gestational age, sex, birth order, and length of hospital stay in days.

Tool II: Pharis Self-Confidence Scale (PSCS)

It was used to measure the mother's self-confidence. Pharis was the first to establish the scale (1978). To ensure linguistic and cultural appropriateness, the researchers in this study used a typical translation–back-translation technique to convert the original English version of the PSCS into Arabic. The 13-item, five-point Pharis Self-Confidence Scale gauges mothers' level of self-confidence in their ability to provide everyday preterm care, including feeding, washing, calming, changing diapers, and identifying preterm infants' needs.

Scoring system: A scale of 1 to 5 was used to rate each item, with 1 denoting not at all, 2 very little, 3 moderately, 4 very lot, and 5 totally. As a result, the overall score falls between 13 to 65, where higher values correspond to more parenting self-confidence. The rise in the scale's overall score suggests that mothers' self-confidence in their ability to care for their babies had increased.

Tool III: Readiness for Discharge Scale for Mothers and Preterm Infants.

The readiness for discharge scale for mothers of preterm, created by Tiryaki and Çınar (2021). It was used in the study to gauge mothers' preparedness for discharge. It has four sub-scales (feeding, perception of general condition, hygienic care-and care practices) and 22 positive items with a 7-point Likert type. The researchers translated it into Arabic.

Scoring system: Each item is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores reflecting greater readiness for discharge. The total score ranges from 22 to 154, and subscale scores are calculated by summing the item scores within each domain. Specifically, the feeding and hygienic care subscales contain 6 items, each scoring range from 6 to 42, while the perception of general condition and care practices subscales contain 5 items, each scoring range from 5 to 35.

Validity of the Tools:

Five panels of experts in maternal and newborn health evaluated the Arabic version of the data collection tools to determine their content validity, and the suggested changes were implemented.

Reliability of the tools:

The reliability of the Pharis Self-Confidence scale using Pearson Correlation (test-retest) was 0.92 and 0.90 for the readiness scale, which means high reliability of the tools.

Pilot study of the research:

To determine the time needed to complete the questions, evaluate the tools' feasibility and objectivity, test their capacity to elicit the relevant information, and determine whether the content and wording were suitable, a pilot study was conducted on 10% of the sample, which included six mothers and their preterm newborns. No adjustments were made considering its results.

Data Collection Procedure:**1-Program Development**

Multidisciplinary guidelines for care of preterm newborns and earlier research on preterm infants were consulted in the development of the program. In order to give mothers of preterm children useful advice on how to care for their babies, a little video was created. A portion of the characteristics, health issues, growth, breastfeeding, and home care of preterm infants made up the DVD. The susceptibility to respiratory problems, hypoglycemia, infection, nursing issues, and jaundice was explained. Mothers could utilize the video at home as needed, in addition to during the four intervention sessions, because it was made to be portable.

Table I-I provides an overview of the curriculum for preterm newborn care.

Session	Item	Content	Method
Session One (45-60 min)	Characteristics of preterm infants and breastfeeding	• Define preterm infant	• Lecture • video • Practice
		• Characteristics of a preterm infant	
		• Problems of the preterm infant	
		• Re-admission	
		• Growth of preterm infant	
		• Benefits of breastfeeding	
		- Practice: holding a baby and breastfeeding	
Session Two (45-60 minutes)	Care of the preterm infant	Prevention and care of hypothermia	• Lecture • video • Practice
		• Skin care	
		• Prevention of infection	
		• Promotion of preterm sleep	
		- Practice: bathing a baby	
Session Three (45-60 minutes)	Post-discharge management of preterm infants	• Observation of stools and urine	• Lecture
		• common health issues, including respiratory difficulties, fatigue, and weak feeding reflexes.	
		• Knowing when to go to a hospital	
Session Four (10 minutes)	Emotional support	• Expressing the difficulties of preterm infant care	• Counseling
		• Providing emotional support	Question and answer

Study Procedures: including four phases

Assessment Phase:

In the NICU, where the mothers' preterm infants were admitted, researchers had one-on-one meetings with the mothers. Informed consent was obtained after the mothers who met the inclusion criteria were given a straightforward description of the study's purpose. Mothers' self-confidence and readiness ratings, which were regarded as the pretest scores, were determined by the researchers after they completed the instruments. The researchers estimated that it took 30 minutes per mother to complete the tools.

Preparation Phase:

The researchers prepared the program's content in Arabic using clear language, covering all the mothers' knowledge and practice gaps regarding the care of a preterm after discharge, based on the analysis of the mothers' self-confidence and readiness scores on the pretest. After a thorough assessment of the literature, using a personal computer or laptop, the researchers created a power point presentation and video film about preterm infants, including how to prevent and treat hypothermia, how to take care of skin issues, how to promote preterm sleep, how to breastfeed, how to prevent infections, and how to handle common health issues that arise in preterm babies. The researchers also created an illustrated booklet about preterm infants' care, including all items mentioned in the PowerPoint presentation in plain Arabic.

Intervention Phase:

The NICU was where the program was first implemented. While the discharge program was being started, the preterm infants remained in the hospital. For teaching purposes, the NICU has a room with a personal laptop and a projector (Data Show). Small groups of mothers, no more than five, were given the following four scheduled sessions, held on different days, which were used to deliver the video-assisted discharge education program. Except for the final session, which lasted ten minutes, each session lasted between forty-five to sixty minutes.

Session One: Focused on the characteristics of preterm infants and breastfeeding. It included an explanation of what a preterm infant is, common health problems, reasons for re-admission, growth patterns, and the benefits of breastfeeding. This session incorporated lectures, video demonstrations, and hands-on practice, such as holding and breastfeeding a baby.

Session Two: Addressed the care of preterm infants, including the prevention and care of hypothermia, skin care, umbilical cord care, and promotion of sleep-in preterm

infants. A bathing demonstration was included as a practical component. Educational methods used were lectures, videos, and practice sessions.

Session Three: It was dedicated to post-discharge management. It covered monitoring stool and urine, recognizing common health concerns such as weak feeding reflexes, fatigability, and breathing difficulties, and identifying signs that require hospital referral. At the end of this session, mothers were given a program booklet along with the researchers' contact information for continued support and guidance post-discharge.

Session Four provided emotional support. This brief 10-minute session allowed mothers to express the emotional challenges of caring for a preterm infant and included counseling and a question-and-answer segment to provide reassurance and address any concerns.

Evaluation Phase:

Mothers' self-confidence and readiness scores, which were regarded as the posttest scores, were computed by the researchers after they completed the instruments. The researchers estimated that it took 30 minutes per mother to complete these tools. Except for the partnership program's stages, the researchers' procedures were the same for the control group. The supervising nurse gave the control group traditional instructions. After completing the control group's data collection, the researchers gave each mother in the control group a booklet and video to be out of ethical issues.

The data collection period will be December 2024 through May 2025. Over six months, data were gathered for both groups.

Ethical Considerations:

The Damietta University ethical consideration committee gave its approval to this project (Du Rec no. 50 on Dec 9, 2024). Participants' consent to take part in the study was obtained from the mothers of preterm infants. The study's aim, possible advantages and disadvantages of participation, and other details were clarified for them.

Additionally, participants were aware of their ability to withdraw at any moment and the confidentiality of their data.

Statistical Analysis:

The study data was examined utilizing "IBM SPSS Statistics Version 23 for Windows Package Program". Categorical data was displayed as percentages and numbers. While numerical data was explained using Mean \pm SD, X^2 for categorical variables and t-test for numerical measurements were used to compare the groups under study. Pearson Correlation (test-retest) was used to test the tools' reliability. Significant differences were estimated at p-value ≤ 0.05 (Infanger & Schmidt-Trucksäss, 2019).

RESULTS

Table 1: Shows the comparison of maternal demographic data between groups. The table reveals no statistically significant differences, suggesting the groups were demographically comparable. A higher proportion of mothers in the study group were under 25 years old (63.3%) compared to 46.7% in the control group. The difference in age distribution was not statistically significant ($p = 0.074$). Education levels were generally similar, with slightly more mothers in the control group holding higher education (33.3% vs. 30.0%), but again not significant ($p = 0.076$). Employment appeared higher in the study group (53.3% vs. 33.3%), yet this difference was also not statistically significant ($p = 0.121$). Household income and delivery method were similarly distributed across groups. Regarding Delivery method, the majority of mothers in the two groups gave birth to their babies by Cesarean section (73.3% vs 76.7% in the control group). Overall, these findings confirm that the two groups were socio-demographically balanced, which strengthens the validity of any observed differences in study outcomes.

Figure (1) illustrates the distribution of birth order among participants in both the study and control groups. In the study group, the majority of mothers had their first child (53.3%), followed by second-born children (33.3%) and third or later children (13.3%).

Similarly, the control group showed a comparable pattern, with 50.0% being first-born, 33.3% second-born, and 16.7% third or later. This suggests that both groups had a similar birth order distribution, indicating no major differences in parental experience level between the two groups.

The comparison of preterm characteristics between the study and control groups is shown in **Table (2)**. Gestational age distribution was similar, with most infants in both groups born between 33 and 36 weeks or 37 weeks, and a slightly higher proportion of very preterm infants (<32 weeks) in the control group (26.7%) compared to the study group (16.7%). Gender distribution was also balanced, with males accounting for 43.3% of the study group and 50% of the control group. Birth order showed no notable variation, with firstborns comprising the majority in both groups. Although the length of hospital stay was slightly longer in the control group, more infants stayed 3–5 days compared to the study group; this difference was not statistically significant. Overall, these results confirm that the two groups were demographically similar in neonatal factors, supporting the validity of outcome comparisons.

Table (3) reveals a comparison of pre- and post-intervention Mean Scores of the Pharis Self-Confidence Scale (PSCS). The findings show a marked improvement in parenting self-confidence among mothers in the study group following the intervention. Pre-intervention mean scores across all 13 PSCS items were notably lower than post-intervention scores, with the total PSCS score rising from 34.10 ± 4.58 to 58.50 ± 4.41 . This improvement was statistically significant across all items ($p < 0.05$), with the most pronounced gains observed in items related to soothing the baby, putting the baby to sleep, and understanding baby behavior, each reaching post-intervention means near or above 4.8. In contrast, the control group showed only modest improvements across most items, with the total score increasing from 37.50 ± 6.92 to 42.47 ± 4.84 , and most item-level post scores hovering around 3.2–3.3. These differences between groups were statistically significant in all items ($p < 0.05$), indicating the effectiveness of the video-assisted educational intervention in enhancing mothers' self-confidence in preterm care.

The bar chart in **Figure 2** illustrates the changes in total Parenting Self-Confidence Scale (PSCS) scores between the study and control groups before and after the intervention. The study group demonstrated a significant increase in self-confidence following the intervention, with mean scores rising from 34.10 to 58.50, while the control group showed only a modest increase from 37.50 to 42.47. The difference in post-intervention scores between the two groups was statistically significant ($p = 0.00$), indicating that the video-assisted discharge education program had a substantial positive impact on mothers' confidence in caring for their preterm infants.

Table 4 showed that following the intervention, mothers in the study group demonstrated significantly higher discharge readiness across all subscales compared to the control group. The total discharge readiness score increased markedly in the study group from 66.80 ± 17.06 to 121.40 ± 11.73 , while the control group showed only a modest rise from 65.13 ± 13.58 to 73.60 ± 11.53 ($p = 0.00$). Significant improvements were observed in specific domains such as Hygienic Care (from 15.63 ± 4.36 to 32.27 ± 2.09) and Care Practices (from 20.03 ± 7.11 to 52.80 ± 3.56) in the study group, highlighting the effectiveness of the educational program. In contrast, the control group showed only minor gains across all subscales, particularly in Feeding and Perception of Condition, with final scores still notably lower than those in the study group. All post-intervention comparisons yielded statistically significant differences ($p < 0.05$), confirming the intervention's strong impact on enhancing maternal readiness for preterm infant care after NICU discharge.

Figure 3 illustrates a significant improvement in maternal total readiness for NICU discharge following the video-assisted educational intervention. Mothers in the study group showed a marked increase in total readiness scores from 66.80 pre-intervention to 121.40 post-intervention, while the control group exhibited only a modest rise from 65.13 to 73.60. The difference in post-intervention scores between the two groups was statistically significant ($p\text{-value} = 0.000$), indicating that the educational program had a substantial positive impact on enhancing maternal preparedness to care.

Statistically significant at $p < 0.05$.

Statistically significant at $p < 0.05$.

Table 1. Mothers' Socio-Demographic Characteristics of Study and Control Sample n=60						
	Study n=30		Control n=30		Significance Test	P-value
	n	%	n	%		
Mother Age (Years)						
Less than 25	19	63.3%	14	46.7%	$\chi^2 = 5.19$	0.074
25-35	9	30.0	10	33.3%		
More than 35	2	6.7%	6	20.0%		
Education						
No	9	30.0%	6	20.0%	$\chi^2 = 6.87$	0.076
Primary	4	13.3%	6	20.0%		
Secondary	8	26.7%	8	26.7%		
High	9	30.0%	10	33.3%		
Occupation						
Employed	16	53.3%	10	33.3%	$\chi^2 = 2.40$	0.121
Unemployed	14	46.7%	20	66.7%		
Income						
Enough	13	43.3	16	53.3%	$\chi^2 = 0.83$	0.36
Not enough	17	56.7	14	46.7%		
Delivery Method:						
Vaginal delivery	8	26.7	7	23.3%	$\chi^2 = 0.15$	0.70
Cesarean section (C-section)	22	73.3	23	76.7%		

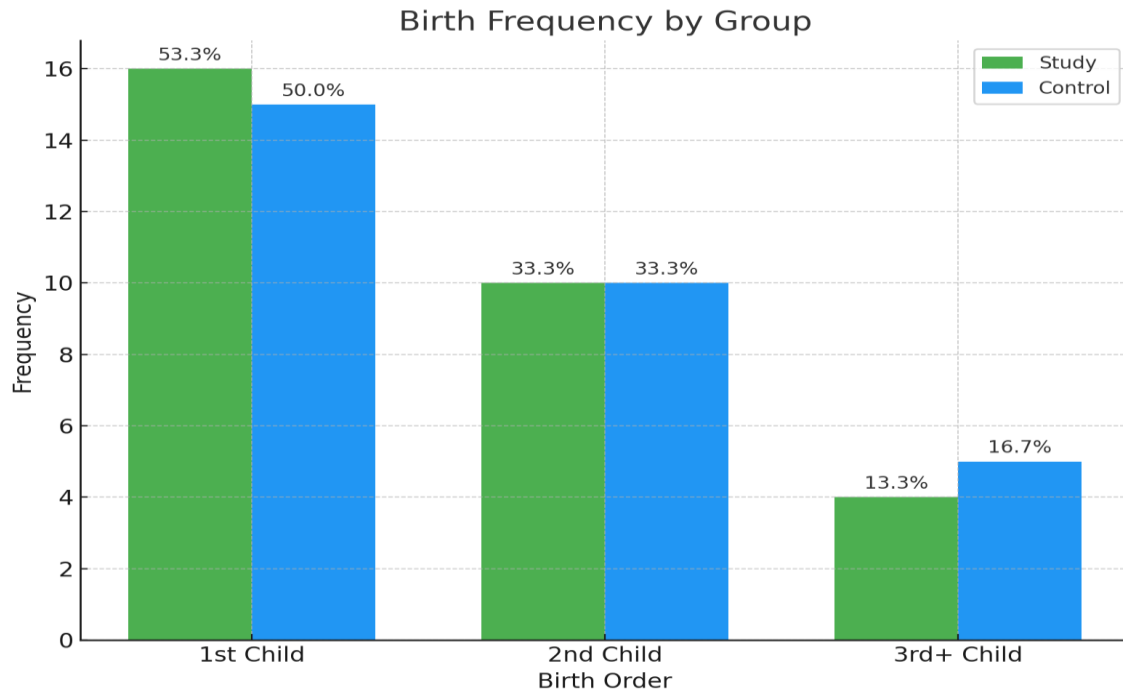


Figure (1): Distribution of Birth Frequency among Participants in Both Study and Control Groups, n=60

Table 2. Preterm Socio-Demographic Characteristics of the Study and Control

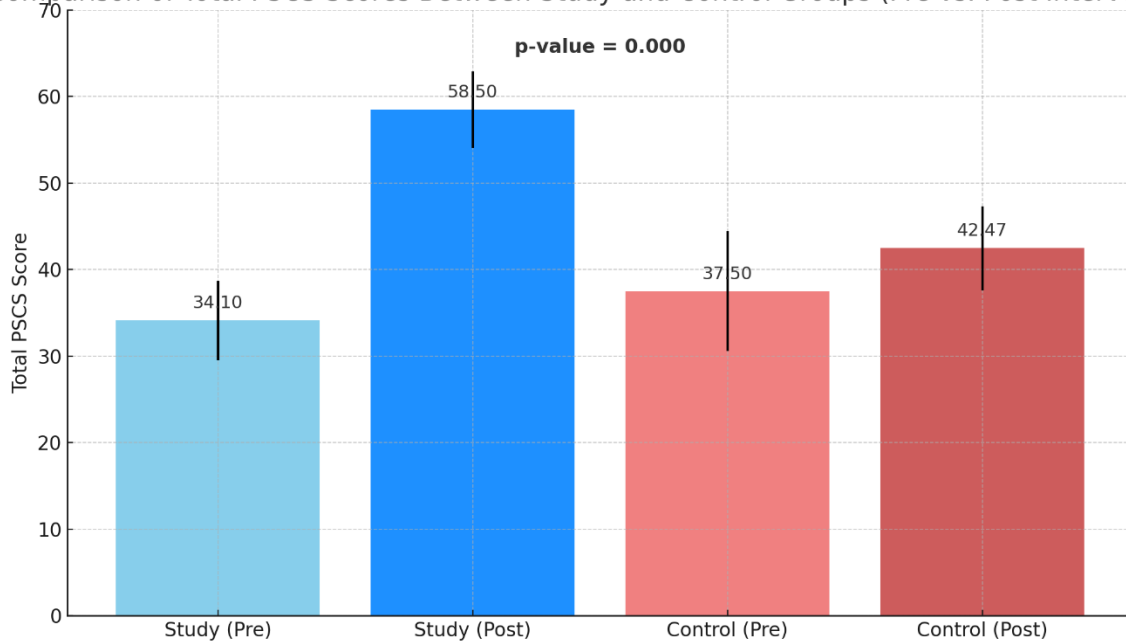
Item	Study n=30		Control n=30		Significance Test	P-value
	n	%	n	%		
Gestational Age (weeks)						
Less than 32 weeks	5	16.7%	8	26.7%	$\chi^2 = 1.01$	0.602
33-36 weeks	13	43.3%	12	40.0%		
37 weeks	12	40.0%	10	33.3%		
Gender						
Male	13	43.3%	15	50.0%	$\chi^2 = 2.40$	0.121
Female	17	56.7%	15	50.0%		
Birth Order:						
First	16	53.3%	15	50.0%	$\chi^2 = 3.70$	0.296
Second	10	33.3%	8	26.7%		
Third	4	13.3%	5	16.7%		
Fourth or more	0	0	2	6.6%		
Length of Hospital Stay (in days):						
Less than 1 day	10	33.3%	6	20.0%	$\chi^2 = 4.26$	0.235
1-2 days	9	30.0%	11	36.7%		
3-5 days	5	16.7%	10	33.3%		
6-10 days or more	6	20.0%	3	10.0%		

Groups n=60

Item No.	PSCS Item Description	Study Group		Control Group		p-value (Post)
		(Pre) Mean \pm SD	(Post) Mean \pm SD	(Pre) Mean \pm SD	(Post) Mean \pm SD	
PSCS1	Confidence in bathing the baby	2.46 \pm 0.73	3.96 \pm 0.99	2.83 \pm 1.01	3.30 \pm 0.79	0.001*
PSCS2	Confidence in diapering	2.60 \pm 0.49	4.46 \pm 0.50	2.73 \pm 1.01	3.27 \pm 0.74	0.000*
PSCS3	Confidence in feeding the baby	2.46 \pm 0.73	4.13 \pm 0.86	2.93 \pm 1.05	3.30 \pm 0.88	0.000*
PSCS4	Confidence in recognizing baby's needs	2.46 \pm 0.73	4.73 \pm 0.44	2.87 \pm 1.10	3.10 \pm 1.09	0.000*
PSCS5	Confidence in dressing the baby	2.86 \pm 0.62	4.60 \pm 0.49	2.83 \pm 1.01	3.33 \pm 0.76	0.000*
PSCS6	Confidence in burping the baby	2.60 \pm 0.72	4.13 \pm 0.86	2.97 \pm 0.96	3.33 \pm 0.76	0.000*
PSCS7	Confidence in holding/soothing baby	2.13 \pm 0.62	4.86 \pm 0.34	2.87 \pm 1.01	3.23 \pm 0.77	0.000*
PSCS8	Confidence in putting baby to sleep	2.56 \pm 0.89	4.86 \pm 0.34	2.90 \pm 0.92	3.27 \pm 0.74	0.000*
PSCS9	Confidence in identifying baby's discomfort	2.83 \pm 0.64	3.73 \pm 0.73	2.90 \pm 0.92	3.20 \pm 0.71	0.005*
PSCS10	Confidence in knowing when to call the doctor	2.70 \pm 0.70	4.53 \pm 0.77	2.93 \pm 1.00	3.37 \pm 0.67	0.000*
PSCS11	Confidence in understanding baby's behavior	2.73 \pm 0.44	4.86 \pm 0.34	2.90 \pm 0.96	3.27 \pm 0.74	0.000*
PSCS12	Confidence in managing baby's crying	2.83 \pm 0.64	4.86 \pm 0.34	2.87 \pm 1.01	3.30 \pm 0.65	0.000*
PSCS13	Overall confidence in baby care	2.66 \pm 0.71	4.73 \pm 0.44	2.90 \pm 0.92	3.30 \pm 0.60	0.000*
Total	Total PSCS Score	34.10\pm4.58	58.50\pm4.41	37.50 \pm 6.92	42.47 \pm 4.84	0.000*

Statistically significant at $p < 0.05$.

Comparison of Total PSCS Scores Between Study and Control Groups (Pre vs. Post Intervention)

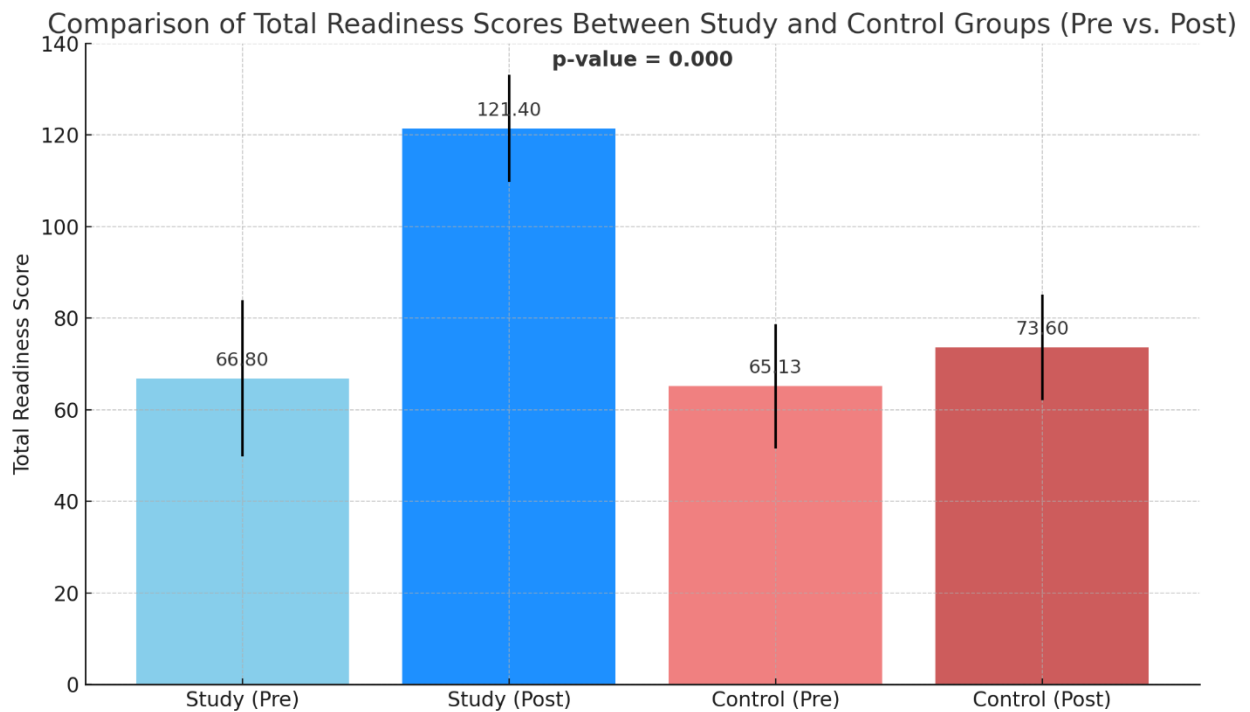


Figure(2): Comparison of Pre- and Post-Intervention total Pharis Self-Confidence Scale (PSCS)

Table 4: Comparison of Pre- and Post-Intervention Scores of NICU Discharge Readiness Scale

Subscale	Study Group		Control Group		p-value (Post)
	(Pre) Mean \pm SD	(Post) Mean \pm SD	(Pre) Mean \pm SD	(Post) Mean \pm SD	
Feeding	15.40 \pm 3.04	15.53 \pm 1.19	12.47 \pm 3.37	14.50 \pm 3.18	0.000*
Perception of Condition	15.73 \pm 4.87	20.80 \pm 1.10	21.20 \pm 5.42	24.13 \pm 4.54	0.003*
Hygienic Care	15.63 \pm 4.36	32.27 \pm 2.09	6.93 \pm 2.12	7.77 \pm 1.96	0.000*
Care Practices	20.03 \pm 7.11	52.80 \pm 3.56	24.53 \pm 5.61	27.20 \pm 4.68	0.000*
Total Readiness Score	66.80 \pm 17.06	121.40 \pm 11.73	65.13 \pm 13.58	73.60 \pm 11.53	0.000*

Statistically significant at $p < 0.05$.

**Figure (3):** Comparison of Pre- and Post-Intervention Total Discharge Readiness Scale

DISCUSSION

Prematurity continues to be the main cause of infant death worldwide. In order for mothers of newborns admitted to the NICU to participate in the supportive care and treatment process, they require a great deal of information (AL-Mukhtar & Abdulghani, 2020). Similarly, lowering the mortality rate of preterm infants is linked to raising their care requirements. According to Ghafari_rad et al. (2024). Inadequate maternal education and poor preterm baby care have an impact on growth and development, lead to illness, and result in NICU readmissions (Opoto et al., 2024; Jang & Ju, 2020).

The current study investigated the effectiveness of a video-assisted education program about the discharge of preterm infants on maternal readiness and their self-confidence. The absence of statistically significant differences in maternal age, education, employment, income, or neonatal characteristics such as gestational age, gender, and length of stay, between the study and control groups indicates successful randomization and demographic comparability. This is a crucial prerequisite in interventional research, as it helps isolate the effect of the educational program from potential confounding variables (Polit & Beck, 2021). The balanced demographic profiles enhance the internal validity of the study, allowing more accurate attribution of outcome differences to the intervention. These were consistent with the prior Egyptian study of El-Hadary et al. (2020).

In comparison to the control group, mothers who received the video-assisted educational intervention showed noticeably greater levels of self-confidence and preparedness for premature care after the intervention, according to the current study's findings. As a nursing therapeutic intervention, the video-assisted discharge education program greatly increased mothers' preparedness for preterm care at home. There are a number of reasons for this: first, in order to meet the needs of the mothers, the study group first had 4 sessions that gave them basic information about how to care for preterm infants following discharge. Second, the program used small groups (1 to 4 mothers), which gave mothers more opportunities to share experiences and get support from buddy mothers. Third, the mothers received an illustrated Arabic language booklet and video,

which they could use at any time. This could help mothers feel more supported by having strategies they have already learned in hands, giving them more confidence and excitement after their babies' discharge. These findings are in concordance with Virgian et al. (2022), who introduced teaching classes for mothers in Indonesia and determined that mothers who attended the class had greater knowledge than before. Furthermore, Kaewwimol et al. (2022) discovered that parents' understanding of every aspect of preterm care had improved following the introduction of a preterm care program.

The Pharis Self-Confidence Scale (PSCS), which measures mothers' self-confidence, showed a significant improvement following the intervention. Mothers in the study group demonstrated a substantial increase in mean PSCS scores post-intervention from 34.10 ± 4.58 to 58.50 ± 4.41 , with gains evident across all items, particularly in areas related to soothing the baby, sleep routines, and interpreting infant behavior. In contrast, the control group showed only minor improvements. Additionally, the findings of Cheng et al. (2018), discovered in their research named "The effectiveness of learning portfolios in learning participation and learners' perceptions of skills and confidence in the mother of preterm infants" Those women in study group who completed the learning portfolio experiences had improved perception, understanding, and confidence when caring for the preterm infants. Also, these results are supported by research emphasizing the role of video-assisted educational interventions in enhancing maternal self-efficacy. For example, the results of a 2019 study by Zahedpasha demonstrated how well virtual schooling works to lower stress and anxiety levels in parents of premature babies in the NICU. Over four days, their study used virtual education and Telegram application groups. Training was given in groups of two to ten parents at various times. Although their study and the current study both use virtual education, their target populations and the educational materials they use are different.

According to a different perspective on the current study, Ahn et al. (2023) showed that the educational demands of premature infants admitted to teaching hospitals in Tehran can be adequately met by using smart mobile apps. The sole goal of this study was to address mothers' educational demands. The control group, which received routine

care, showed only modest improvements, underscoring the need for tailored educational strategies beyond standard discharge procedures. This conclusion is reinforced by the fact that, similar to other virtual training, the implementation of virtual supportive interventions facilitates mothers of preterm infants' access to information at any time and location, thereby raising their understanding and enhancing their abilities to care for their children, which in turn boosts their self-confidence. Thus, the resilience of mothers can be positively impacted by the use of virtual supportive interventions (Khoshnood et al., 2023).

Carvalho et al. (2021) showed that a mother's social networks, home care worries, and contradictory emotions are essential for a smooth transition upon discharge. Despite acknowledging the significance of many elements that contribute to a successful transition of care, the continuity of treatment following hospital release was deemed to be the most crucial. Post-intervention, current results revealed a significant increase in maternal readiness for discharge across all subscales in the study group, particularly in hygienic care and care practices. As opposed to the control group's slight gain from 65.13 ± 13.58 to 73.60 ± 11.53 , the overall preparedness score increased from 66.80 ± 17.06 to 121.40 ± 11.73 . These differences were statistically significant ($p = 0.000$). The improvement in domains such as hygienic care and practical infant care underscores the effectiveness of visual learning tools in knowledge retention and skill acquisition. These results align with recent findings by Tiryaki and Çınar (2021), who validated the NICU discharge readiness scale and emphasized the multidimensional nature of parental preparedness. Additionally, the study by Sousa et al. (2020) demonstrated that the instructional video facilitated understanding of the care and how to perform it, which helped with learning and maybe knowledge implementation, because it was founded on the principle of self-efficacy. The quantity of hits following the educational intervention is a highly meaningful indicator of the strategy's efficacy in promoting healthy behaviors.

The statistically significant post-intervention differences suggest that video-assisted education is more effective than traditional verbal or written discharge instructions only. This can be interpreted by the fact that the structured video format may

have provided a more comprehensive and accessible way for mothers to learn and internalize essential skills, as seen in care practices and hygienic care, which are critical areas for infection prevention and infant safety. These domains are often overlooked in verbal discharge instructions due to time constraints in busy NICU settings.

Finally, these findings highlight the need for NICU policies to integrate multimedia-based discharge education as a standard component of discharge planning. Incorporating video modules can bridge knowledge gaps, especially in settings with limited nurse-patient interaction time or literacy barriers. Moreover, empowering mothers through structured discharge education is not only beneficial for neonatal outcomes but also for maternal psychological well-being. Enhanced confidence and readiness can reduce the risk of postnatal stress and improve mother-infant bonding

CONCLUSION

Based on the results, it can be concluded that a video-assisted discharge education program improved mothers' self-confidence and preparedness for caring for their preterm infants when they were discharged from the NICU. Compared to mothers who received routine care, mothers who received the video-assisted educational intervention had noticeably higher gains in parenting self-confidence and discharge preparedness across all evaluated categories. These results demonstrate the vital role that focused educational initiatives play in promoting mothers' readiness, especially for high-risk preterm infants. The findings further support the need to include multimedia resources in discharge education to enhance comprehension, involvement, and caring effects.

RECOMMENDATIONS

Based on the study findings, the following recommendations are proposed:

1. Integrate video-assisted education into routine NICU discharge planning to enhance mothers' confidence in caring for preterm infants at home.

2. Develop standardized discharge protocols that include practical demonstrations of essential newborn care practices (e.g., feeding, hygiene, soothing, and recognizing warning signs).
3. Ensure individualized follow-up for the mother's post-discharge to reinforce learning, address concerns, and monitor infant well-being.
4. Train nursing staff and health educators on delivering effective discharge education using a combination of visual, verbal, and written methods tailored to maternal literacy levels.
5. Conduct larger-scale and multi-center studies to validate the effectiveness of video-assisted education across diverse healthcare settings.

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فاعلية برنامج تعليمي باستخدام الفيديو حول خروج الأطفال الخدج من وحدة العناية المركزة لحديثي الولادة على استعداد الأمهات وثقتهم الذاتية بأنفسهن

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الملخص

يضمن البرنامج التعليمي باستخدام الفيديو للرضع المبتسرين ممارسات مثلى ويساعد الأمهات في تلقي الرعاية المناسبة. **الهدف:** تقييم فعالية برنامج تعليمي باستخدام الفيديو على استعداد الأمهات لخروج الرضع المبتسرين من وحدة العناية المركزة لحديثي الولادة وثقتهم الذاتية بأنفسهن. **التصميم:** تم استخدام تصميم بحث شبه تجريبي. تكونت العينة من 60 أمًا لأطفال مبتسرين تم اختيارها من وحدة العناية المركزة لحديثي الولادة بمستشفى الأزهر بمدينة دمياط الجديدة خلال الفترة من ديسمبر 2024 إلى مايو 2025، وتم تقسيمها بالتساوي إلى مجموعة ضابطة ومجموعة دراسة. تلقت المجموعة الضابطة الرعاية الروتينية فقط، بينما تلقت مجموعة الدراسة أربع جلسات تعليمية باستخدام الفيديو. **الأدوات:** استخدمت ثلاث أدوات: استمارة الخصائص الديمغرافية للعينة، مقياس الثقة الذاتية بالنفس، ومقياس استعداد الأم للخروج والرعاية المنزلية للرضع المبتسرين. **النتائج:** أظهرت النتائج وجود فرق ذي دلالة إحصائية عالية في متوسط مجموع درجات مقياس الثقة الذاتية بالنفس ومقياس استعداد الأم لصالح المجموعة التي تلقت البرنامج التعليمي باستخدام الفيديو مقارنة بالمجموعة الضابطة التي تلقت الرعاية الروتينية. **الاستنتاج:** أظهرت نتائج الدراسة أن الأمهات اللاتي شاركن في برنامج تعليمي باستخدام الفيديو أظهرن مستوى أعلى من الثقة الذاتية بالنفس والاستعداد مقارنة بالأمهات في المجموعة الضابطة. **التوصيات:** ينبغي على ممرضى الأطفال في وحدات العناية المركزة لحديثي الولادة دمج التعليم باستخدام الفيديو في خطط الخروج الروتينية لتحسين معلومات الأمهات ومهاراتهن وثقتهم الذاتية في رعاية أطفالهن المبتسرين في المنزل.

الكلمات المرشدة: برنامج تعليمي باستخدام الفيديو ، الثقة الذاتية للأمهات، استعداد الأمهات للخروج من

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