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**A STUDY TO ASSESS THE EFFECTIVENESS OF EDUCATIONAL
INTERVENTIONAL PROGRAM ON KNOWLEDGE REGARDING CARE OF
PRETERM BABIES AMONG PARENTS OF PRETERM BABIES ADMITTED
IN NICU OF A SELECTED HOSPITAL**

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ABSTRACT

Background of the Study: Premature births are responsible for the highest number of admissions to Neonatal Intensive Care Units (NICUs). The primary reason for newborn mortality is preterm birth. Significant contributing factors to neonatal death include being born small for gestational age and having low birth weight. Infants delivered prior to the 37th week of gestation are classified as premature, often referred to as "preemies." The majority of premature births, over 80%, occur between the 32nd and 37th weeks of gestation, known as moderate to late preterm births. Tragically, many of these infants lose their lives due to a lack of basic essential care, such as maintaining warmth and providing feeding support.. **Aim:** The aim of the study was to assess the knowledge of the parents regarding care of preterm babies. **Material and Methods:** A preliminary, single-group pretest and post-test study was carried out to evaluate the understanding of parents with preterm infants regarding the care of such babies. This research was conducted with a sample of 60 parents whose preterm babies were admitted to the Neonatal Intensive Care Unit. The participants were chosen through purposive

sampling, and they were provided with informed consent and an informational sheet explaining the research study in detail. Data was collected using a self-structured knowledge questionnaire, and an educational intervention program was administered following the pretest. A post-test was conducted after seven days using the same questionnaire to measure the effectiveness of the educational intervention program. **Result:** When examining the frequency and percentage distribution, it becomes evident that the largest proportion of parents (61.7%) fell within the age range of 20 to 25 years. Almost 53 individuals (93.3%) among the respondents were mothers of preterm infants. Approximately 85.0% (51) of the participants identified as Hindu in terms of their religion, and 95.0% (57) of them had received only primary education. In relation to family structure, an equal number of participants, 50%, were from nuclear and joint families, respectively. The majority, 58.3% (35), of preterm babies were born during the 31-32 weeks of gestation. Among the preterm babies, 26 of them had a birth weight ranging from 1001 to 1500 grams. It was found that the mean value was 13.77, median score was 3.175, maximum score was 19, minimum score was 6, range of score was 13 and mean percentage was 45.90 %. It was found that the mean value was 25.60, median score was 26, maximum score was 28, minimum score was 21, range of score was 7 & mean percentage was 85.30 %. In the initial assessment of pretest knowledge, 40 individuals (66.7%) were categorized as having inadequate knowledge, while 20 individuals (33.3%) demonstrated moderate knowledge. No individuals were found to possess adequate knowledge (0%). In the follow-up post-test knowledge assessment, none of the individuals exhibited inadequate knowledge (0%), 3 individuals (5%) displayed moderate adequate knowledge, and 57 individuals (95%) exhibited adequate knowledge. The computed t-value (25.172) exceeds the tabulated value (2.00) at a significance level of 0.05. Consequently, it can be concluded that the educational intervention program effectively improved preterm baby care, thus confirming the research hypothesis. No significant association was observed between the score levels and other demographic variables, as the calculated chi-square values were lower than the table values at a significance level of 0.05.. **Conclusion:** The results of the study indicate that there is no noteworthy correlation between the initial knowledge level assessed before the educational intervention and certain demographic factors among parents with preterm babies in the NICU. However, the post-test knowledge scores showed a significant enhancement following the educational intervention program, confirming its effectiveness in augmenting the knowledge of parents with preterm babies. As a result, the hypothesis H2 was supported and accepted.

Keywords: Effectiveness, Knowledge, Educational Intervention program, Preterm bab, NICU

INTRODUCTION

Babies born significantly before the 32-week gestation mark face an elevated risk of mortality, medical issues, and potential long-term neurological consequences. The World Health Organization's classification of preterm birth encompasses any birth occurring before the 37-week gestation period, with subcategories that include very preterm birth and extreme preterm birth (occurring before 28 weeks gestation). On a global scale, it is estimated that more than one in ten infants were born prematurely in 2013, totaling around 15 million premature newborns. Alarming, complications associated with preterm birth lead to the annual loss of 1 million children under the age of 5. In developing countries, accurately measuring very preterm and extreme preterm births is particularly challenging, and the associated mortality rates are exceptionally high [1-3].

Premature infants are typically characterized by their diminutive size, often weighing less than 2500 grams, with shorter measurements from crown to heel (usually less than 47 cm) and smaller head and chest circumferences (usually less than 32 cm and 30 cm, respectively). These babies may exhibit sparse lanugo hair and minimal vernix caseosa on their skin. Their skin appears thin, almost gel-like in texture, and tends to have a pinkish hue. Additionally, they may have underdeveloped ear

cartilage, small or non-existent breast nodules, and a lack of creases on the soles of their feet. Generally, premature babies exhibit minimal activity and are often hypertonic with weak or absent crying. Their external genitalia may not have fully developed, and they might display sluggish or absent neonatal reflexes, along with an inability to coordinate the suck-swallow reflex [4].

The neonatal phase is a crucial period in the lives of preterm infants. Proper care during this time is of utmost importance and encompasses essential aspects such as ensuring warmth, nourishment, hygiene, appropriate clothing, and the care of the umbilical cord. The primary objectives of caring for preterm infants are to facilitate regular growth and development while minimizing the risk of health issues and mortality. Providing this care can be a significant challenge for parents, as these babies are entirely dependent on a caregiver for survival.

One of the most pivotal factors in ensuring the survival of a newborn is the effective regulation of their body temperature. The care given during the initial critical days plays a profound role in establishing a healthy and nurturing family dynamic for the baby. In this context, the mother fulfills her role by safeguarding, comforting, and nurturing her infant to meet their needs [5,

6].

NEED FOR STUDY

New-born babies constitute one of the most vulnerable group even when born healthy and at term. Prematurity makes them even more susceptible to adverse health outcomes. Prematurity is the leading cause of death in children under 5 years across the globe. Worldwide 15 million babies are born preterm out of which 1/5th are born in India. In recent years, the trend from most countries which have reliable data collection shows that the rate of preterm birth is on the rise. Out of the 15 million babies born preterm, 1 million do not survive. Among those that survive, many suffer from many lifelong disabilities including hearing deficit and visual problems. In the developed world, 9 out of 10 extreme preterm babies survives; whereas in low-income countries including Sub Saharan Africa and South East Asia, only 1 out of 10 extreme preterms survives [7].

Roughly 85 percent of preterm births occur within the 32 to 37 weeks gestation range, and a significant proportion of these infants do not require intensive medical intervention to ensure their survival. Solutions aimed at enhancing the well-being and chances of survival for these vulnerable preterm and low birth weight babies are available. This includes fundamental newborn care practices like

drying, maintaining warmth, immediate and exclusive breastfeeding, ensuring proper hygiene, and caring for the umbilical cord. Additionally, basic care that involves providing support for feeding, managing infections, and addressing breathing difficulties can be the decisive factor between life and death for these small infants [8].

In India, among the annual birth count of 27 million babies, a substantial 3.5 million infants are born prematurely. A report from "The Hindu" in 2016 indicated that India holds the unfortunate distinction of having the highest rate of premature infant mortality. To address this critical issue, the India New-born Action Plan (INAP) was launched in September 2014, with a bold objective of eliminating preventable newborn deaths and stillbirths by the year 2030. The plan's overarching goal is to achieve a single-digit neonatal mortality rate and stillbirth rate by the designated target year. A key strategy within INAP is known as kangaroo mother care [9].

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of Educational Interventional program on knowledge regarding care of Preterm babies among parents of preterm babies admitted in NICU of a selected Hospital

OBJECTIVES

- To assess the existing knowledge of parents regarding care of preterm baby by

pretest

- To develop and implement Educational interventional program on Knowledge regarding care of preterm babies

- To find out an association between knowledge of parents regarding care of preterm babies and selected socio-demographic variables.

- To evaluate the effectiveness of educational interventional program on knowledge regarding care of preterm babies by post test

Hypotheses

H0: There will be no significant association between knowledge of parents regarding care of preterm babies and selected socio-demographic variables.

H1: The post-test knowledge score of the parents regarding care of preterm babies will be higher than the pretest knowledge score.

MATERIAL AND METHODS

Research Approach

Quantitative approach has been used to conduct the present study

Research Design

The researchers had adopted pre-experimental one group pre-test post-test design for the study

Place of Study

The study was conducted in Dhiraj hospital, Vadodara

Source of Data

The sources of data were parents of preterm babies admitted in NICU of selected hospital. Vadodara

Sample description Population

Population for the study was parents of Preterm babies admitted in NICU of the selected Hospital, Vadodara.

Sample size

The calculated sample size was 60 parents of preterm babies

Sampling Technique

Samples were selected by Purposive sampling method

The total Sample size was 60 parents of preterm babies

Selection Criteria

Inclusion Criteria: -

- The parents who had preterm babies born before the completion of 37 weeks of gestation with birth weight below 2.5 kg

- Parents of preterm babies available and willing to participate in the study

- Parents who can read, write, and understand the languages Gujarati, or Hindi

- Mothers who had given birth to a child first time

- Preterm baby admitted at NICU soon after delivery

Exclusion Criteria: -

The parents of preterm babies who are

- Critically ill and under ventilator support in NICU

- Diagnosed with Congenital

anomalies

- Multigravida parents

Variables of the study

Dependent Variable

It refers to the existing level of knowledge of parents regarding care of preterm babies

Independent Variable

It refers to the Educational Interventional programme on improving the knowledge among parents on care of preterm baby.

The tool was divided into two sections:

Section 1: Socio-demographic Data of the parents of preterm babies

This section includes socio demographic variables of mothers of under five children such as Parents age, Role of parent in the family, Religion, Occupation, Educational status of the parents, Type of family, Area of Residence, Family History, Gestational age of the baby and Birth weight of the

baby

Section II: Semi-structured Knowledge questionnaire regarding care of preterm babies

The questions were related to knowledge aspects of preterm care, thermoregulation, assisted in feeding, skin care, umbilical cord care, elimination care, immunization, eye care, prevention of infection and follow up care.

Scoring Interpretation

The semi structured questionnaire was used to assess the knowledge among parents on preterm care. It contains 30 multiple choice questions with 10 sub division.

Scoring procedure and Interpretation

The knowledge questionnaire was evaluated with 1 score for each right answer and 0 score for the wrong answers.

Marks	Percentage (%)	Level of Knowledge
Less than 15	Less than 50%	Inadequate Knowledge
16 – 22	50% - 75%	Moderately Adequate Knowledge
23 – 30	Above 75%	Adequate Knowledge

Pilot study

In order to test the feasibility, relevance and practicability, the study was conducted among 06 parents of preterm babies in the same manner as that of original study at Neonatal Intensive Care Unit. Data collected were analyzed to find the suitability to statistical method. No issues and challenges raised during pilot study.

Data collection procedure

The researchers initiated the study by

introducing themselves to the chosen participants, who were parents of preterm infants, and provided a clear explanation of the study's purpose. Right from the beginning, written informed consent was acquired from every participant, and they were furnished with a Participant Information sheet to address any queries or concerns. Additionally, the parents were informed that they had the freedom to discontinue their participation at any point

during the study for any reason. Throughout the research process and the entire study duration, the researchers were committed to upholding the privacy, religious beliefs, cultural values, and ethical principles of the study participants.

The data collection period was extended to a duration of four weeks. Data gathering took place at the Neonatal Intensive Care Unit of Dhiraj General Hospital, from Monday to Saturday, spanning the hours of 9 am to 4 pm. During this time, individual interviews were conducted with parents utilizing a semi-structured knowledge questionnaire. The pre-test, which had a duration of 30 minutes, was administered on the same day as the educational intervention program, which lasted for 45 minutes. This intervention involved various educational tools, including flashcards, PowerPoint presentations, pre-downloaded videos, and pamphlets. These materials were developed by the researchers in consultation with subject matter experts. After a seven-day interval, a post-test was conducted, which also lasted for 30 minutes and utilized the same semi-structured knowledge questionnaire. The data collected during this phase was recorded in the coding sheet each day, with data entry occurring after 4 pm.

Data Analysis and Interpretation

The collected data was entered in the pre-test level of knowledge with the

coding sheet using SPSS package and analysed based on the objective of the study using descriptive and inferential statistics.

Descriptive statistics

- Frequency and percentage distribution was used to analyse the sociodemographic data of the participants. Mean, Median and standard deviation were used

Inferential statistics

- Chi Square“ test used to find out significant association between programme demographic variables and knowledge scores.
- Paired “t” test was used to analyse effectiveness of educational interventional program.

Organization of Data

Section –A: Distribution of sociodemographic variables of study participants

Section – B: Knowledge scores of parents of preterm babies before and after Structured teaching programme

Section – C: Comparison of mean scores between pre -test and post-test knowledge of structured teaching programme on care of preterm babies among parents.

Section – D: Effectiveness of Educational Interventional programme on care of pre-term babies among parents.

Section – E: Association between selected Demographic variables

RESULTS

The **Table 1** illustrates that a significant proportion of the parents (61.7%) were in the age bracket of 20-25 years. Nearly 53 individuals (93.3%) among the respondents were mothers of preterm infants. Approximately 85.0% (51) of the participants identified with the Hindu religion, and 95.0% (57) of them had received only primary education. Concerning family type, an equal number of participants, 50%, belonged to nuclear and joint family setups, respectively. The majority, constituting 58.3% (35), of preterm babies were born during the 31-32 weeks of gestation. Additionally, the birth weight of 26 preterm infants fell within the range of 1001 to 1500 grams.

Section – B: Table 2 shows Knowledge scores of parents of preterm babies before and after Structured teaching programme

Table 3 Represents the descriptive statistics of pretest level of knowledge. It was found that the mean value was 13.77, median score was 3.175, maximum score was 19, minimum score was 6, range of score was 13 and meanpercentage was 45.90 %.

Table 5 provides the descriptive statistics for the post-test knowledge level. The findings revealed that the average score was 25.60, the middle value (median) was 26, the highest score attained was 28, the lowest score recorded was 21, resulting in a

score range of 7, and the mean percentage equated to 85.30%.

Section – C:

The **Table 6** illustrates the initial knowledge scores of the participants before the educational intervention. In the pretest knowledge assessment, 40 individuals (66.7%) were classified as having insufficient knowledge, while 20 individuals (33.3%) demonstrated moderate knowledge. None of the participants fell into the category of possessing adequate knowledge (0%). In the post-test knowledge assessment, there were no participants with inadequate knowledge (0%), 3 individuals (5%) exhibited a moderate level of knowledge, and a significant majority of 57 individuals (95%) showed adequate knowledge.

Section – D:

Table 7 shows the mean % and mean difference of pre and post-test. The calculated t value (25.172) is greater than the table value (2.00) at 0.05 level of significance. Hence it has been found that the educational intervention program was effective in terms of care of preterm babies.

Section – E:

Table 9 depicts that there is no significance association between the level of scores and other demographic variables. The calculated chi-square values were less than the table value at the 0.05 level of significance.

Table 1: Frequency and percentage distribution of socio demographic variables

Variables	Options	Percentage	Frequency
Age of the Parents	20 – 25 years	61.7%	37
	26 – 30 years	38.3%	23
	31 – 35 years	0.0%	0
	> 35 years	0.0%	0
Role of the parent	Father	6.7%	4
	Mother	93.3%	56
Religion	Hindu	85.0%	51
	Muslim	15.0%	9
	Christian	0.0%	0
	Others	0.0%	0
Education	Primary education	95.0%	57
	Higher Secondary education	3.3%	2
	Undergraduate	0.0%	0
	Post Graduate	1.7%	1
	No formal Education	0.0%	0
Occupation	Employed	95.0%	57
	Unemployed	5.0%	3
Type of Family	Nuclear Family	50.0%	30
	Joint Family	50.0%	30
Area of Living	Rural	50.0%	30
	Urban	50.0%	30
Monthly Income	Less than Rs. 5000/-	0.0%	0
	Rs. 5001 – 10,000/-	61.7%	37
	Rs. 10001 – 15,000/-	38.3%	23
	More than 15,000/-	0.0%	0
Previous experience	Yes	0.0%	0
	No	100.0%	60
Gestational age	< 30 weeks	3.3%	2
	31 – 32 weeks	58.3%	35
	33 – 34 weeks	38.3%	23
	35 – 36 weeks	0.0%	0
Birth weight	Less than 1000 gm	30.0%	18
	1001 – 1500 gm	43.3%	26
	1501 – 2000 gm	26.7%	16
	2001 – 2500 gm	0.0%	0

Table 2: Knowledge scores of parents of preterm babies before and after Structured teaching programme

CRITERIA MEASURE OF PRETEST KNOWLEDGE SCORE	
Score Level (N= 60)	PRE TEST f (%)
Inadequate Knowledge (0-15)	40 (66.7%)
Moderate Knowledge (16-22)	20 (33.3%)
Adequate Knowledge (23-30)	0 (0%)
Maximum Score=30 Minimum Score=0	

Table 3: Mean, Median & Standard Deviation of Pre-test knowledge assessment

Descriptive Statistics	Mean	S.D.	Median Score	Maximum	Minimum	Range	Mean%
PRETEST knowledge	13.77	3.175	14	19	6	13	45.90
	Maximum= 30		Minimum= 0				

Table 4: Represents the criteria measure of Post test Knowledge score

CRITERIA MEASURE OF POSTTEST KNOWLEDGE SCORE	
SCORE LEVEL (N= 60)	POST TEST f (%)
Inadequate Knowledge (0-15)	0 (0%)
Moderate Knowledge (16-22)	3 (5%)
Adequate Knowledge (23-30)	57 (95%)
Maximum Score=30 Minimum Score=0	

Table 5: Mean, Median & Standard deviation of Post-test Knowledge Assessment

N=60							
Descriptive Statistics	Mean	S.D.	Median Score	Maximum	Minimum	Range	Mean%
Post-test Knowledge	25.60	1.487	26	28	21	7	85.30
Maximum=30				Minimum=0			

Table 6: Comparison of mean scores between pre -test and post-test knowledge of structured teaching programme on care of preterm babies among parents

CRITERIA MEASURE OF KNOWLEDGE SCORE		
SCORE LEVEL (N= 60)	PRE TEST f (%)	POST TEST f (%)
Inadequate Knowledge (0-15)	40 (66.7%)	0 (0%)
Moderate Knowledge (16-22)	20 (33.3%)	3 (5%)
Adequate Knowledge (23-30)	0 (0%)	57 (95%)
Maximum Score=30		Minimum Score=0

Table 7: Effectiveness of Educational Interventional programme on care of pre-term babies among parents.

N=60							
Paired T Test	Mean±S.D.	Mean%	Range	MeanDiff.	Paired TTest	P value	Table Value at 0.05
Pre-test Knowledge	13.77±3.175	45.90	6-19	11.830	25.172 *Sig	<0.001	2.00
Post-test Knowledge	25.6±1.487	85.30	21-28				
** Significance Level 0.05				Maximum=30		Minimum=0	

Table 8: Mean % and mean difference of Pretest and Post test Knowledge

Mean%	Pre-test Knowledge	Post-test Knowledge	Difference	Pre-Test Knowledge Score %	Post-test Knowledge Score %	Difference %
Average	13.77	25.60	11.83	45.89	85.33	39.44

Table 9: Association between pre-test level of knowledge with the selected Demographic variables

ASSOCIATION OF PRETEST KNOWLEDGE SCORES WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES									
Variables	Opts	ADEQUATE KNOWLEDGE	MODERATE KNOWLEDGE	INADEQUATE KNOWLEDGE	ChiTest	P Value	df	Table Value	Result
Age of the Parents	20 – 25 years	0	9	28	3.525	0.060		3.841	Not Significant
	26 – 30 years	0	11	12					
	31 – 35 years	0	0	0					
	> 35 years	0	0	0					
Role of the parent	Father	0	0	4	2.143	0.143		3.841	Not Significant
	Mother	0	20	36					
Religion	Hindu	0	16	35	0.588	0.443		3.841	Not Significant
	Muslim	0	4	5					
	Christian	0	0	0					
	Others	0	0	0					
Education	Primary education	0	20	37	1.579	0.454		5.991	Not Significant
	Higher Secondary education	0	0	2					
	Undergraduate	0	0	0					

	Post Graduate	0	0	1					
	No formal Education	0	0	0					
Occupation	Employed	0	20	37	1.579	0.209	1	3.841	Not Significant
	Unemployed	0	0	3					
Type of Family	Nuclear Family	0	10	20	0.000	1.000		.841	Not Significant
	Joint Family	0	10	20					
Area of Living	Rural	0	11	19	0.300	0.584	1	3.841	Not Significant
	Urban	0	9	21					
Monthly Income	Less than Rs. 5000/-	0	0	0	1.727	0.189		3.841	Not Significant
	Rs. 5001 – 10,000/-	0	10	27					
	Rs. 10001 – 15,000/-	0	10	13					
	More than 15,000/-	0	0	0					
Previous experience	Yes	0	0	0		N.A		N.A	
	No	0	20	40					
Gestational age	< 30 weeks	0	0	2	2.422	0.298		5.991	Not Significant
	31 – 32 weeks	0	10	25					
	33 – 34 weeks	0	10	13					
	35 – 36 weeks	0	0	0					
Birth weight	Less than 1000 gm	0	7	11	2.262	0.323		5.991	Not Significant
	1001 – 1500 gm	0	6	20					
	1501 – 2000 gm	0	7	9					
	2001 – 2500 gm	0	0	0					

DISCUSSION

The findings of this study align with a similar investigation conducted by Anna Clara F. Vieira and colleagues in 2018. Their study explored various factors, including oral, systemic, and socioeconomic elements, in postpartum women to identify associations with preterm birth. The study encompassed 279 postpartum women who had given birth to a singleton live-born infant. The cases consisted of women who delivered before

reaching 37 completed weeks of gestation (preterm birth), while the controls were women who gave birth at term (37 weeks or more). The study by Vieira and her team concluded that complications arising from preterm births were linked to increased healthcare costs, which directly impacted the healthcare systems in various countries. Consequently, addressing factors associated with preterm birth is of paramount importance to implement effective preventive strategies [5].

Another research study conducted by Ravi Upadhyay, Zelee Hill, and Nita Bhandari in 2018 engaged in formative research to evaluate the viability, acceptability, and adoption of Kangaroo Mother Care (KMC) with the objective of devising an intervention package for a randomized controlled trial involving low birth weight (LBW) infants in Haryana, India. The qualitative research methods encompassed 40 in-depth interviews with recently delivered women and six focus group discussions, two of each kind involving fathers, grandfathers, grandmothers, and community health workers. The findings of the study revealed that most mothers recognized benefits such as increased weight gain and enhanced activity in their infants through the practice of KMC. In conclusion, the research established that Community-initiated KMC was well-received by mothers, and the rates of its adoption were notably high. Formative research played an indispensable role in shaping the strategy for implementing this intervention [6].

According to Jong Cheul Lee, Ph.D., and colleagues in their 2018 study, altering the frequency of bathing for preterm infants can have positive effects on their skin condition and axillary bacterial colonization. Reducing the frequency of bathing in preterm infants was found to be advantageous in lowering the risk of

hypothermia and decreasing the stress associated with frequent nursing care. The bathing interval for preterm infants could be extended from every two days to every four days without raising the likelihood of skin-related issues or axillary bacterial colonization [7].

Regarding the vaccination of preterm infants, a study carried out by Prashant Kumar Singh in 2013 suggested that targeted interventions within marginalized segments of society and addressing barriers to accessing healthcare services are crucial. The study defined children as fully immunized when they had received vaccinations against tuberculosis (BCG), three doses of diphtheria, pertussis (whooping cough), and tetanus (DPT), three doses of polio, and one dose of the measles vaccine by the age of 12 months. Specifically, the BCG vaccination should be administered at birth or during the initial clinical encounter, DPT and polio necessitate three vaccinations at approximately 4, 8, and 12 weeks of age, and the measles vaccine should be given at 12 months of age or shortly after reaching 9 months of age [8].

CONCLUSION

In conclusion, the research project titled "A Study to Assess the Effectiveness of Educational Interventional Program on Knowledge Regarding Care of Preterm Babies Among Parents of Preterm Babies

Admitted in NICU of a Selected Hospital" has yielded valuable insights. The study's findings reveal that the educational intervention program had a significant and positive impact on enhancing the knowledge of parents with preterm babies who were admitted to the Neonatal Intensive Care Unit (NICU) in the selected hospital.

Recommendations

- Expanding the sample size would enable the replication of this study.
- By replicating the study with a larger and more diverse sample, the findings can be extended to a broader population.
- To explore more effective solutions, additional experimental studies can be carried out on the same issue.

Conflict of Interest: The authors declare that there is no any conflict of interest.

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