



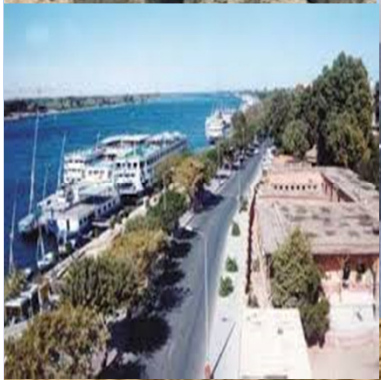
**The Effect Of Nutritive Versus
Non- Nutritive Feeding Methods
On Pain Relieve For Premature
Infants In Prone Position
Following Invasive Procedures.**



By

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- ❑ Pain is a complex phenomenon whose nature is at best elusive in preterm infants. Rationalization for inadequate treatment of pain has resulted in unnecessary suffering for these newborn infants.



- ❑ Wong (2007) reported that the unchecked release of stress hormones by untreated pain may exacerbate injury, prevent wound healing, lead to infection, prolong hospitalization, and even lead to death. These fragile neonates are simply too sick to have their pain treated. Health care professionals are responsible for influencing positive change in clinical practice about neonatal pain.



- ❑ The objectives of pain management in newborn infants are to diminish the intensity and duration of pain, reduce the physiological effects, enhance the neonate's ability to cope & recover and provide the most effective solution with the least risk to the newborn infant.



- ❑ Assessment of pain in the preverbal preterm infant is difficult, especially in the neonate, because the most reliable indicator of pain, self-report, is not possible. Evaluation must be based on physiological changes and behavioral observations.



- ❑ Several studies have been devoted to assessing an infant's responses to nociception. Although behaviors such as vocalizations, facial expressions, body movements, and general state are common to all newborn infants, they vary with different situations.



- ❑ There are two types of treatment; pharmacological and non-pharmacological treatment. Morphine is the most widely used opioid analgesic for pharmacologic management of neonatal pain.



- Non-pharmacological measures are used to alleviate pain, and reduce discomfort in neonates in the intensive care unit include repositioning, swaddling, containment, cuddling, rocking music, reducing environmental stimulation, tactile comfort measures, oral sucrose and non nutritive sucking.



- Neonatal nurses have a clinical and ethical responsibility to ensure that the neonate has appropriate and adequate pain relief, ensure effective pain management and improve the standard of care for the neonate in pain



- Nurses can also serve as an instrument in changing attitudes about the causes and consequences of neonatal pain and improving pain management by implementing useful pain assessment tools and utilizing them consistently.

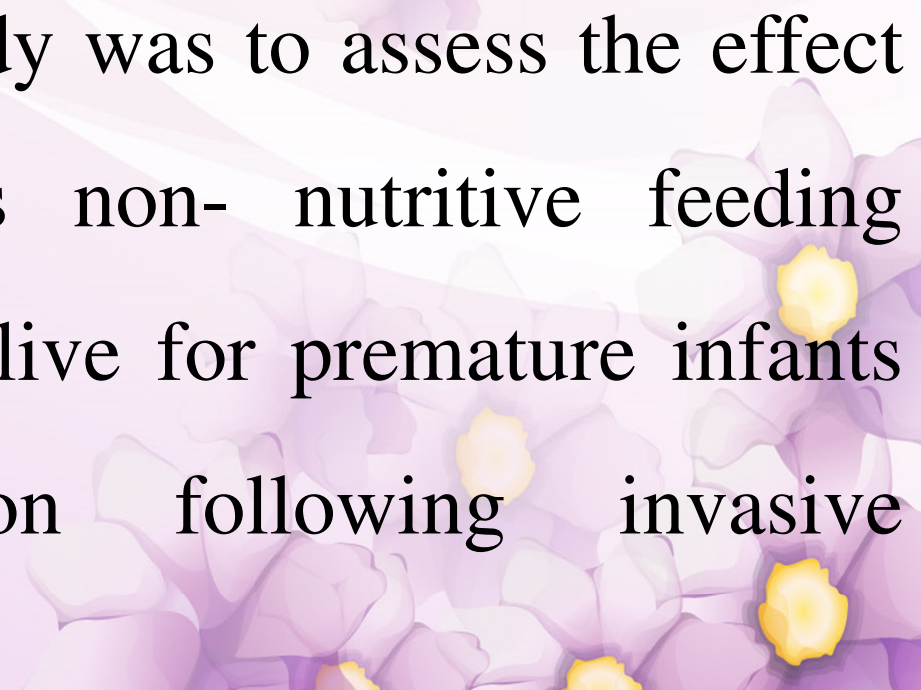


- The nurse plays a major role in choosing the most appropriate and most effective methods and must perform gentle handling, rocking, caressing, cuddling, and massaging.



AIM OF THE STUDY

The aim of this study was to assess the effect of nutritive versus non-nutritive feeding methods on pain relief for premature infants in prone position following invasive Procedures.



Subjects and Method

A-Research design:

Quasi Experimental Research design was utilized to meet the aim of the study.

B-Setting:

This study was conducted in neonatal Intensive care unit (NICU) at Assuit University Pediatric Hospital Egypt.



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Subjects and Method cont....

C-Subjects:

A convenient sample of 90 children were randomly divided into three groups (30 child for each group):

- Group I The control group that consisted of premature infants who followed hospital routine in feeding.
- Group II The premature infants who were receiving sucrose solution in prone position .
- Group III The premature infants who were receiving non-nutritive sucking (pacifier) in prone position.

Subjects and Method cont....

The criteria for the selection of the study subjects

1. Both sexes.
2. Premature infants who were receiving invasive procedure.
3. Premature infants with severe medical problems or surgical congenital anomalies, and those who receiving analgesia or sedation within 12 hours prior to data collection were excluded from the study sample.

Subjects and Method cont....

D-Tools of the study

Two tools for collecting data were used in this study:

Tool one:

Assessment sheet of premature infants' condition:-

It was developed by the researcher after reviewing literature it include Demographic characteristics and clinical data about premature infants such as birth weight, gender, gestational age, postnatal age and medical history.

Subjects and Method cont....

Tool two:

Premature infant pain profile (PIPP) scale. It was developed by Stevens et al. (1996) to assess premature infants' pain profile. It consisted of 7 indicators: 3 behavioral indicators such as facial actions (brow bulge, eye squeeze, and nasolobial furrow)

- 2 physiologic indicators such as heart rate, oxygen saturation; and 2 contextual indicators such as gestational age, behavioral state of infant pain. It included four point composite pain scales: 0,1,2,3. It was translated into Arabic language by the researcher to assess the Egyptian premature infant's pain scale.

Subjects and Method cont....

➤ *Scoring system:*

0 = no pain

7 = mild pain

14 = moderate pain

21 = worst pain

Method of Data Collection

1-Permission was obtained from the director of the Neonate Intensive Care Unit.

2-Written informed consent from parents of the studied premature infants was obtained

3-Tool one was developed by the researcher after reviewing literature.

4-Validity of tool one was estimated by 5 experts in pediatric field and its result was 95%.

5-Reliability was estimated by Alpha Cronbach's test for tool one and its result was $R = 0.64$

6-Validity of tool two was estimated after its translation to Arabic by 9 experts in pediatric field and its result was 95%.

7-Reliability was estimated by Alpha Cronbach's test for tool two and its result was $R= 0.68$

8-Confidentiability of the researcher was ascertained

9-A pilot study was carried out on 9 premature infants who fulfilled the criteria of the study to test the feasibility and applicability of the tools and to make the needed correction.

10-Assessment of the premature infants' condition was done by the researcher through using tool one for all three groups [control & study groups II & III].

11-The premature infants of the three groups were positioned in prone position before providing them with the feeding methods.

12- The control group followed the hospital routine in feeding methods of premature infants.

13-The premature infants in study group II were provided with sucrose solution through syringe two minutes before the invasive procedure [heel sticks] by the researcher

14-The premature infants in study group III were provided with the non-nutritive sucking (pacifier) two minutes before the invasive procedure [heel sticks] by the researcher.



15-The premature infants' pain was assessed for all studied subjects (control & study groups) by the researcher immediately after the invasive procedures by using the premature infant pain profile scale (tool two).







Table (I):- Distribution of The Percentages of Premature Infants in The Control & Study Groups According to Their Socio-demographic Characteristics

Item	Group I Control group (n=30)		Group II (sucrose feeding in prone position) (n=30)		Group III (non-nutritive sucking in prone position) (n=30)	
	NO	%	NO	%	NO	%
Less than 28 weeks	0	0.0	1	3.3	1	3.3
28 weeks -	16	53.3	9	30.0	8	26.7
32 weeks-	10	33.3	16	53.3	15	50.0
36 weeks & more	4	13.3	4	13.3	6	20.0
Range	28-36		26-36		26-36	
Mean ± SD	31.27+2.52		32.53+2.83		32.2+2.73	

Table (I):- Distribution of The Percentages of Premature Infants in The Control & Study Groups According to Their Socio-demographic Characteristics **cont.**

Item	Group I Control group (n=30)		Group II (sucrose feeding in prone position) (n=30)		Group III (non-nutritive sucking in prone position) (n=30)	
	NO	%	NO	%	NO	%
Birth weight						
Less than 1500g	13	43.4	13	43.4	10	33.3
From 1500 g -	14	46.6	14	46.6	17	56.7
From 2500 g & more	3	10.0	3	10.0	3	10.0
Range	0.7-3.1		0.8-3.6		0.9-3.5	
Mean ± SD	1.64±0.57		1.81±0.61		1.70±0.591	
Gender	NO	%	NO	%	NO	%
Male	17	56.7	20	66.7	17	56.7
Female	13	43.3	10	33.3	13	43.3

Table (2) The Degree of Premature Infant's Pain for The Control & Study Groups Before and After Receiving Their Feeding Methods in Prone Position According to Their Pain Profile Scale.

Degree of pain	Group I Control group		Group II				Group III			
			Before		after		before		after	
	NO	%	NO	%	NO	%	NO	%	NO	%
No pain (given zero score)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mild pain (1-7 score)	1	3.3	0	0.0	25	83.3	0	0.0	21	70.0
Moderate pain (8-14 score)	13	43.3	12	40.0	5	16.7	19	63.3	9	30.0
Severe pain (15-21 score)	16	53.4	18	60.0	0	0.0	11	36.7	0	0.0
Total	30	100.0	30	100.0	30	100.0	30	100.0	30	100.0

Table (3) The Relationship Between The Degree of Premature Infants' Pain for The Control Group and Group II Before and After Receiving Sucrose Solution in Prone Position According to Their Pain Profile Scale

Degree of pain	Group I Control group		Group II				X ²	P- value
	NO	%	Before		after			
			NO	%	NO	%		
No pain (given zero score)	0	0.0	0	0.0	0	0.0	1.2	0.56
Mild pain (1-7 score)	1	3.3	0	0.0	25	83.3	0.02	<0.001
Moderate pain (8-14 score)	13	43.3	12	40.0	5	16.7		
Severe pain (15-21 score)	16	53.4	18	60.0	0	0.0		
Total	30	100.0	30	100.0	30	100.0		

Table (4) The Relationship Between The Degree of Premature Infants' Pain for The Control Group and Group III Before and After Receiving Sucrose Solution in Prone Position According to Their Pain Profile Scale.

Degree of pain	Group I Control group		Group III				X ²	P- value
			Before		after			
	NO	%	NO	%	NO	%		
No pain (given zero score)	0	0.0	0	0.0	0	0.0	1.2	0.56
Mild pain (1-7 score)	1	3.3	0	0.0	25	83.3	0.02	<0.001
Moderate pain (8-14 score)	13	43.3	12	40.0	5	16.7		
Severe pain (15-21 score)	16	53.4	18	60.0	0	0.0		
Total	30	100.0	30	100.0	30	100.0		





Based on the findings of the present study:

- It was concluded that sucrose solution and non-nutritive sucking were effective in reducing premature infants' pain during invasive procedures in prone position as significant differences were found between the control group and study groups.

- In addition, it could be said that sucrose solution is slightly better than non-nutritive sucking (pacifier) in pain relief for premature infants during invasive procedure. Although no significant difference was found, the percentage of premature infants who suffered from mild pain & received sucrose solution was higher than those who suffered from mild pain & received non-nutritive sucking.

RECOMMENDATIONS



❑ **The study recommended that:**

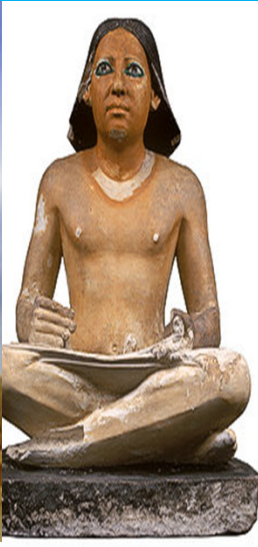
1-Health care professionals should use the appropriate types of non-pharmacological interventions, e.g., sucrose solution and non-nutritive sucking, to reduce pain of premature infants during invasive procedures.



2-The use of feeding methods such as sucrose solution and non-nutritive sucking (pacifier) before painful invasive procedures in premature infants on prone position is a simple, non invasive and effective method in pain management.

4-Increasing the likelihood of use of sucrose and non-nutritive sucking should be accepted as routine interventions for pain management in the Neonatal Intensive Care Unit (NICU).





تسمى المنطقة سقاره



Thank You

