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Effectiveness of Breast Feeding on Pain Experience of Infants during Intravenous Therapy

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ABSTRACT

Breast-feeding is a normal way of promoting bonding and attachment between neonates and mothers. Breast-feeding is not just as food sources, but a source of comfort and security. The present study aimed to determine whether breast feeding make any significant difference in the degree of pain experienced by infants while undergoing intravenous therapy such as intravenous canula insertion, intravenous medication administration and intravenous fluid administration.

. The results showed that shows that breastfeeding intervention was effective in reducing pain among infants who were undergoing intravenous therapy through results show effect of breastfeeding on pain management coping and defense mechanism could also interfere with effect of breastfeeding intervention.

Keywords: Effectiveness of Breast Feeding, Pain Experience, Intravenous Therapy

INTRODUCTION

Children are the asset of the nation. The birth of an infant is one of the most inspiring and emotional event that can occur in one's life time. Neonates signify the beginning of the life as an independent individual. It is the single most hazardous period of life confronted with dramatic challenges due to transition from dependent intra uterine existence to independent extra uterine life. Neonates undergo various painful procedures Such as collection of blood sample, IV cannulation and IM injection during their stay in hospital. New born communicate pain only through behavioral and physiological Changes. Pain is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage" [1].

Evaluation of pain in neonates is difficult due to the subjective nature of pain and the inability of neonates to verbally express pain. Surrogate measures used to describe pain in neonates include motor responses, facial expressions, cry and changes in physiologic parameters like heart rate, blood pressure, oxygen saturation and respiratory rate [2,3]. Various changes have been compiled to create various scores [4]. Validated scores for the assessment of pain include the Neonatal Facial Coding System (NFCS), Neonatal RRJNHS| Volume 2 | Issue 1 | January, 2016 16 Infant Pain Scale (NIPS) or Premature Infant Pain Profile (PIPP). These reactions to pain may contribute to the development of hypoxia, hypercarbia, acidosis, ventilator asynchrony, pneumothoraces, reperfusion injury and venous congestion and subsequent late intraventricular haemorrhage or late extension of early intraventricular haemorrhage and periventricular leukomalacia [5]. These behavioural changes may also disrupt postnatal adaptation, parent-infant bonding and feeding schedules.

Pain is of particular importance in the neonate because of the evidence of improved clinical outcomes, including decreased mortality, when adequate pain control is achieved. Pain is a perception that is often overlooked in the infant population, especially with regard to immunizations. Evidence has shown that infants do perceive and remember pain, demonstrating heightened pain responses to other painful procedures later in life [6].

NEED FOR THE STUDY

In a Cochrane review, Shah, Aliwalas, and Shah included 11 studies examining the effects of breastfeeding or breast milk on acute procedural pain; the lowest neonatal facial score (2.3 vs. 7.1), lowest cry duration (5 vs. 49), and lowest decrease in parasympathetic tone (–2 vs. 1.2) and also when compared with the alternative interventions studied [7]. Bottle feeding with infant formula also showed better effects than the other interventions, however was not as effective as breastfeeding. Feeding and in particularly breastfeeding during heel prick testing were found to be the most effective methods of pain relief [8].

Leite et al. carried out a randomized clinical trial study consisted of 60 full-term newborns: 31 in the experimental group and 29 in the control group. The experimental group was breastfed 5 minutes before, during, and for 5 minutes after the blood collection procedure [9]. Neonates in the control group were held in mothers' arms but not fed or given a soother. The duration of breastfeeding was prolonged in comparison to previous studies. The result shows that breastfeeding was effective in reducing pain caused by blood collection for newborn screening [10]. Elena Uga et al. studied 200 healthy full term newborns (100 cases and 100 controls), proposing the puncture during breastfeeding, and explaining to them all the advantages of this practice. Pain assessment was evaluated by DAN scale (Douleur Aigue Nouveau ne scale) [10].

The difference in score of pain according to the DAN scale was significant in the two groups of patients (p = 0.000); the medium score was 5.15 for controls and 2.65 for cases (newborns sampled during breastfeeding). results confirmed the evidence of analgesic effect of breastfeeding during heel puncture. This procedure could easily be adopted routinely in maternity wards. In breastfed newborns; breastfeeding itself is the preferred method to alleviate procedural pain. In addition to being safe, effective, natural, and without added cost, it provides an additional opportunity to promote and support breastfeeding [10].

Breast-feeding links evolutionary biology and medical practice. This is of clinical interest because pain is routinely experienced in hospital settings, even by healthy newborns, and natural interventions are effective at a time when many pharmacologic interventions are not. There are several studies showing that breast milk affects pain response [11]. Breast feeding and expressed breast milk is associated with pleasant memories of being with mother for babies.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of breast feeding on pain experience of infants during intravenous therapy in a selected hospital at Coimbatore.

AIM OF THE STUDY

The main aim of the study is to determine whether breast feeding make any significant difference in the degree of pain experienced by infants while undergoing intravenous therapy such as intravenous canula insertion, intravenous medication administration and intravenous fluid administration.

OBJECTIVES:

- To assess and compare the degree of pain in the experimental and control group during intravenous therapy (Intravenous canula insertion, IV medication administration and IV fluid administration)

HYPOTHESIS

H_1 : There will be a significant difference between the degree of pain in experimental and control group during IV therapy.

OPERATIONAL DEFINITION

Effectiveness:

The changes expected to occur in the pain experience of infants during IV therapy as a result of breast feeding intervention.

Breast Feeding:

It is the method of feeding the baby with milk directly from the mother's breast.

Pain:

Pain is an uncomfortable sensation experienced by the infants during intravenous therapy while inserting canula, giving medication and fluids. The pain is measured by using face, legs, activity, cry consol ability scale (FLASCC) which is mainly used for infants.

Intravenous Therapy:

Intravenous therapy refers to procedure carried out into the vein which includes insertion of canula into the vein, administration of medication and fluids into the vein.

ASSUMPTION:

- The pain responses of infants are observable, recordable and reportable.
- The infants are able to perceive pain sensation
- The pain responses of infants will vary from one infant to the other
- Brest feeding reduces pain perception

DELIMITATION:

- The study is delimited to infants aged 1 – 6 month
- Infants who are hospitalized at least for one day with intravenous therapy
- Infants who is on breast feeding
- Study is delimited to one selected hospital.

METHODOLOGY

Research Approach

In this study evaluative and experimental approach

Research Design

A research design selected for this study was quasi – experimental post test only design. (Experimental and control group).

Variables:

Independent variable: Breast feeding

Dependent variable: Degree of pain during intravenous therapy

Setting of the study: Selected hospital in Patiala

Population

The population comprised of all the infants in the age group of one to six months who was hospitalized in the general ward and outpatient department of selected children hospital in Patiala at the time of the study.

Sample size

The sample consisted of 30 infants, 15 infants in experimental group and 15 infants in control group.

Sampling technique

Non probability convenient sampling technique was adopted for the selection of the samples. Those who fulfilled the including criteria were included in the sample.

Criteria for sample selection

The following were the criteria for selection of samples for the study.

Inclusion criteria

1. Infants with 1-6 months of age
2. Infants who were stay in the hospital.
3. Infants who were getting intravenous therapy minimum of 2 days (IV line insertion, IV medication IV fluids).
4. Infants who were breastfed
5. Infants having mother as a bystander.

Exclusion criteria

1. Infants who were not breastfed
2. Very sick infants
3. Infants who were receiving analgesics, sedative medication.

Description of the Tool

The tool used for this study was a face, legs, activity, cry, consol ability scale (FLACC scale) cum observation check list with 2 parts.

Part I : it consisted of demographic data which included age, sex & educational status of mother.

Part II : it comprised an observation check list it record the pain response of infants. The response of pain was observed in 3 categories namely intravenous line insertion, intravenous medication administration and intravenous fluid administration. Under each of these heading 3 observations of pain response were done by using FLACC scale.

These pain responses of the infants were gathered by investigator's observation.

FLACC scale:

There are several pain intensity scale are available. In this study face, legs, activity, cry, consolabiltiy scale (FLACC scale) scale was used. It is a standardized scale which ranges from 0-10. The numerical scale is graded as follows:

Score : 0 – no pain, 1 -3 mil pain, 4 – 6 moderate pain, 7-10 severe pain.

In order to observe the non-verbal behaviour of subjects, observation check list was developed with 5 categories. Columns were provided in order to observe the non-verbal behaviour of subjects and pain response throughout the process of intravenous therapy including inhavounour line insertion, intravenous medication administration and intravenous fluid administration. The categories of observation check list are as follows:

I. Face

0 – No particular expression/smile

1 – Grimace, disinterested, tight facial muscles, furrowed/brows chin, jaw.

2 – Frequent to constant quivering chin, clenched jaw.

II. Legs

0 – Normal position / relaxed
1 – Uneasy, restless, tense
2 – Kicking / legs drawn up

III. Activity:

0 – Lying quietly, normal position, moves easily
1 – Squirming, shifting back & forth tense
2 – Arched, rigid or jerking

IV. Cry:

0 – no cry, awake/sleep
1 – Means / whimpers, occasional complaints
2 – Crying steadily, screams or sobs, frequent complaints.

V. Consol ability:

0 – content, relaxed
1 – Reassigned by occasional touching, hugging, distractible
2 – Difficult or comfort

Validity of the tool

In order to establish the content validity, the tool was given to nursing experts and medical experts. The nursing experts were masters in nursing with child health nursing specialization and with 8 – 10 years of experience, The medical experts were a consultant pediatrician with 15 years of experience and holding charge of private children hospital and private Multispecialty hospitals.

Some of the demographic variables were removed based on the investigator's observation and suggestion of the guides. The modifications and suggestions of the observation check list were incorporated in the final preparation by the investigator.

Reliability

The reliability was calculated by Karl Pearson's coefficient correlation. The obtaiend value was 0.98. The tool appeared to have sufficient reliability.

Data Collection Procedure:

The main study was conducted at the selected children hospital at Coimbatore from 15-02-2012 to 14-03-2012. A written permission and formal consent was obtained from the selected children hospital chairman and Director for the data collection.

Samples those who fulfilled the inclusion criteria were selected by convenient sampling method from the general medical wards of the hospital. First 15 samples were assigned to experimental group and next 15 samples were assigned to control group. After selecting the infant, the investigator gave a self introduction and explained the purpose of the study and obtained mother's willingness. Then the demographic data were collected from the mother and simultaneously recorded. By using FLACC scale the pain experience of the infants were observed during various aspects of intravenous therapy such as intravenous canula insertion, inravenous medication and intravenous fluid administration in procedure. Only one child was observed at a time during each procedure for the experimental group child was breastfed during intravenous therapy. The intensity of paid was observed and recorded. For the control group the breastfeeding was not given to the infants during intravenous therapy.Total period of data collection was 30 days. The investigator was able to get 2 or 3 samples per day.

Data Analysis:

The data obtained would be analyzed in terms of the objectives of the study using descriptive and inferential statistics.

RESULT AND FINDING

Demographic characteristics of the control and experimental group

Majority of the experimental (84.3%) and control (87.67%) were in the age group of 1-3 months. 64% of the infants were male in experimental group and 66.66% were female in control group and level of education of mothers ranged from illiterate to graduation. 53.33% in experimental group were graduates and in the control group Nature 40% had higher secondary education.

Assessment of pain in experimental and control group

- In experimental group 20% of infants did not experienced pain 66.67% infants had mild pain (pain score 1-3) and 13.33% had moderate pain (4-6) respectively. In the control group 6.67% infants had moderate pain (4-6) and 93.33% had severe pain (7-10) during the intravenous canula insertion procedure

- In experimental group 73.33% infants did not experienced pain only 26.67% had mild pain (1-3) during Intravenous medication and Intravenous fluid administration respectively. In control group 6.67 had moderate pain (4-6) and 93.335 infants had severe pain (7-10) during Intravenous medication and Intravenous fluid administration procedure.

- the comparison of degree of pain experienced by the infants during over all Intravenous therapy in the control and experimental group the findings after analysis revealed that 53.33% of infants did not experience pain and 46.67% had mild main (1-3) during overall Intravenous therapy with breastfeeding in experimental group 100% of infants were experienced sever pain (7-10) without breast feeding during Intravenous therapy in control group.

- Comparison of mean pain score of experimental and control group during intravenous procedure such as Intravenous canula insertion Intravenous medication and Intravenous fluid administration. The finding after analysis revealed that all the three aspects of intravenous therapy the mean pain score was less than 2 (mild pain) in experimental group and the mean pain score was above 7-6 (severe pain) in the control group while comparing control group with experimental group there was a significant difference in the mean pain score of all a three aspects of intravenous procedure so alternative hypothesis was accepted.

- Comparison of mean pain score of experimental and control group during overall intravenous therapy. The findings after analysis revealed that the mean pain score of experimental group was 1.13 (mild pain) and 8.92 (severe pain) in control group during overall intravenous therapy. The table concluded that when the child breastfeed they experienced very mild pain where as the control group experienced severe pain. There was a significant difference in the mean pain score during overall intravenous therapy. So alternative hypothesis was accepted.

CONCLUSION

The study finding shows that breastfeeding intervention was effective in reducing pain among infants who were undergoing intravenous therapy through results show effect of breastfeeding on pain management coping and defense mechanism could also interfere with effect of breastfeeding intervention.

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