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Effectiveness of Pamphlet on Knowledge Regarding Toilet Training of Children among Mothers of Toddler in Selected Rural Areas: A Quasi Experimental Study

Elishiba Mire

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Abstract

Background: In present years, the age at which parents start and finish toilet training of their children has increased. To cope with the problems caused by this later completion, it is essential to raise the knowledge of mothers of toddler regarding toilet training.

Objectives: (1) To assess the pre-test knowledge score regarding toilet training among mothers of toddler. (2) To assess the post test knowledge score regarding toilet training among mothers of toddler. (3) To compare the pre test and post test knowledge score regarding toilet training among mothers of toddler. (4) To find out the association between knowledge score regarding toilet training among mothers of toddler with the selected demographic variables.

Methodology: Quantitative Quasi experimental one group pre test post test research design was selected to conduct study. 70 mothers of toddler were selected as samples based on exclusion and inclusion criteria through non-probability purposive sampling technique.

Results: The mean pre-test knowledge of mothers of toddler was 11.08 ± 1.73, whereas mean post-test knowledge of mothers of toddler was 16.64 ± 1.03. The findings revealed that pamphlet was statistically effective (t = 22.63* p-value 0.0001*) and the association between post-test knowledge and selected demographic variables of toddler such as age in years (f = 3.50, p-value 0.03*) and number of children (f = 4.37, p-value 0.01*) were statistically significant.

Conclusion: Pamphlet helped the mothers of toddler to increase knowledge regarding Toilet Training of Children.

Keywords: Mother of toddler; Pamphlet; Rural areas; Toilet Training of Children.

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INTRODUCTION

Achievement of control over bodily functions of defecation and urination is one of the major tasks of the toddler period during growth and development[1] Mariam Webster defines, "Toilet training as the process of training a child to control bladder and bowel movements and to use the toilet".[2] Voluntary control of the anal and urethral sphincters is achieved sometime between ages

18 and 24 months.[3] Acquiring toileting skills is a universal developmental milestone, but the path to toilet training has changed subsequently over the past century. Parents need guidance in recognizing age for toilet training, methods of toilet training and how to address problems in toilet training.[4]

Background

In present years, the age at which parents start and finish toilet training of their children has increased. To cope with the problems caused by this later completion, it is essential to raise the knowledge of mothers of toddler regarding toilet training.[5]

Need of the study

The prevalence of nocturnal enuresis in India is 7.61%–16.3%. The prevalence is elevated in children between 5 to 8 years (6 to 8 years) and little in children between 11 to 12 years (8 to 10 years). Single center in India revealed, 18.4% of children experienced nocturnal enuresis with sleep problems. In rural areas in India, the prevalence is higher among children from poor socio-economic background compared to those from the upper middle background. A family history of enuresis has been recognized in enuretic children from both rural and urban areas. Other risk factors comprise of living with a single parent, living with stepparents, parents with health issues, conflicts at home, stress due to enuresis, scolding, and poor scholastic performance.[6]

Based on the above findings an investigator felt need of educating mothers of toddler in rural area regarding toilet training through pamphlet. This will raise awareness and improve knowledge of mother to facilitate toilet training among toddler at appropriate age and time.

Title of the study

Effectiveness of pamphlet on knowledge regarding Toilet Training of Children among mothers of toddler in selected rural areas: A Quasi Experimental Study.

OBJECTIVES OF THE STUDY

Primary Objective:

To assess the effectiveness of pamphlet on knowledge regarding toilet training among mothers of toddler in selected rural areas.

Secondary Objectives:

- To assess the pre test knowledge score regarding toilet training among mothers of toddler.
- To assess the post test knowledge score regarding toilet training among mothers of toddler.
- To compare the pre test and post test knowledge score regarding toilet training among mothers of toddler.
- To find out the association between knowledge score regarding toilet training among mothers of toddler with the selected demographic variables.

Operational definitions

1. *Effectiveness:* In this study, effectiveness of pamphlet on improvement of knowledge of mothers of toddler regarding toilet training of children.
2. *Pamphlet:* In this study, pamphlet means an educative material which provides information on toilet training on the following aspects such as meaning of toilet training, age for toilet training, indications of toddler's readiness for training, toilet training methods, process of toilet training, problems of toilet training.
3. *Knowledge:* In this study, knowledge is facts, information, with regards to toilet training among mothers of toddlers in term of correct response to the items on structured knowledge questionnaire.
4. *Toilet training:* In this study, it refers to the acquisition of skills necessary for urinating and defecating in a toilet at a socially acceptable time and age.
5. *Mother:* In this study, it refers to mothers of children between 1 – 3 years.
6. *Toddler:* In this study, it refers to a young child, usually defined as the ages of 1-3 years old.
7. *Rural area:* In this study, it refers to a selected village.

Hypothesis

Will be tested at 0.05 level of significance

H_0: There is no significant difference in the pre-test and post-test knowledge regarding toilet training of children among mothers of toddler.

H_1: There is significant difference in the pre-test and post-test knowledge regarding toilet

training of children among mothers of toddler.

Delimitation

Present study is delimited to mothers of toddler residing in selected rural areas.

Ethical Aspects

The study proposal was accepted by the ethical committee of the institution. Permission was obtained by the concerned authorities before conducting the study. Consent letter was obtained by individual samples after explaining them the research process in their own language. Confidentiality regarding the participants information was maintained by using code number by the investigator.

Review of literature

In the present study the literature reviewed has been organized into the following categories:

- Literature related to toilet training.
- Literature related to knowledge of mothers regarding toilet training.
- Literature related to effectiveness of various educational intervention on toilet training.

Conceptual Framework

The conceptual framework selected for the study was based on Ernestine Wiedenbach's "Prescriptive Theory" (Helping art of clinical nursing).[7]

MATERIAL AND METHOD

A. ***Research approach:*** Quantitative research approach

B. ***Research design:*** Quasi experimental one group pre-test and post-test research design

C. ***Research setting:*** Selected rural areas of the city

D. ***Variables***

- *Independent variable:* Pamphlet on knowledge regarding Toilet Training of Children.
- *Dependent variables:* Knowledge regarding Toilet Training of Children among mothers of toddler.
- *Demographic variable:* In this study the demographic variables are Age, Education, Occupation, Monthly family income, Religion, Type of family, Order of the child.

E. *Population:* All mothers of toddler.

- *Target population:* All mothers of toddler residing in selected rural areas of the city.
- *Accessible population:* Mothers of toddler residing in selected rural areas of the city who were available at the time of data collection and who were fulfilling the inclusive criteria.

F. ***Sampling***

- ***Sample size:*** 70 mothers of toddler
- ***Sampling technique:*** Non probability purposive sampling technique.

G. Sampling criteria

Inclusive criteria: In this study, inclusive criteria was, mothers of toddler.

- Residing in rural areas.
- Who are available at the time of data collection.
- Who are able to read and write Marathi, Hindi and English.

2 ***Exclusive criteria:*** In this study, exclusive criteria was, mothers who are:

- Not willing to participate in the study.
- Having mentally retarded children.
- Having physically retarded children.
- Health professionals.

H. ***Description of Tools***

- *Section A:* Demographic variables
- *Section B:* Self-structured knowledge question -naire based on Toilet Training of Children

I. ***Validity***

To ensure the content and construct validity, the tool was distributed to 22 experts including child health nursing subject experts, community health nursing and paediatrician. 17 tools were received after validation from the experts.

J. ***Reliability***

In this study, Karl pearson correlation coefficient formula was used for reliability. The correlation coefficient 'r' of the questionnaire was r = 0.8439, which is more than 0.8. hence the questionnaire was found to be reliable.

K. ***Pilot study***

Pilot study was conducted for a period of 7 days. A sample of seven mothers of toddler was selected from the selected rural area. The collected data was coded, tabulated and analysed by using descriptive statistics and inferential statistics. The pilot study was feasible in terms of time, money, material and

resources.

L. ***Data collection***

- The main study data was gathered from 28/12/2020 to 16/01/2021.
- Permission was obtained from the Sarpanch of concerned gram panchayat.
- The samples were approached in small groups on a daily basis.
- Before giving the questionnaire, self-introduction was given by the investigator and the purpose of the study mentioned.
- Consent of the samples were taken.
- The pre-test questionnaires were distributed and collected back after 30 minutes.
- After collecting the Pre-test score, the investigator administered the treatment (Pamphlet on knowledge regarding toilet training of children).
- After 7 days post test was taken on the same subjects.

RESULT

Section I: Distribution of mothers of toddler with regards to demographic variables.

Section II: Assessment of pretest knowledge of mothers of toddler regarding toilet training of children in the selected rural areas.

Table 1: Percentage Wise Distribution of Mothers of Toddler According to their Demographic Characteristics.

n=70

Demographic Variables	Frequency (f)	Percentage (%)
Age (yrs)		
20-24 yrs	12	17.1
25-29 yrs	37	52.9
30-34 yrs	21	30.0
≥35 yrs	-	-
Education		
Primary	-	-
Secondary	5	7.1
Higher Secondary	38	54.3
Graduation	27	38.6
PG	-	-
Other	-	-
Occupation		
Goverment Service	4	5.7
Pvt. Service	5	7.1
Housewife	38	54.3
Self Employed	17	24.3
Labourer	6	8.6
Other	-	-
Monthly Family Income (Rs)		
Below 10000 Rs	1	1.4
10001-15000 Rs	4	5.7
15001-20000 Rs	22	31.4
>20000 Rs	43	61.4
Religion		
Hindu	48	68.5
Muslim	2	2.9
Christian	2	2.9
Buddhist	18	25.7
Others	-	-
Type of family		
Nuclear	36	51.4
Joint	33	47.1
Extended	1	1.4
Number of children		
One	33	47.1
Two	35	50.0
Three	2	2.9
More than three	-	-

Section III: Assessment of post test knowledge regarding toilet training of children among mothers of toddler.

Table 2: Distribution of Mothers of Toddler with Regard to Level of Pre Test Knowledge Regarding Toilet Training of Children.

n=70

Level of knowledge score	Percentage score	Frequency (f)	Percentage (%)	Mean	SD
Poor	0-20% (0-5)	-	-		
Average	21-40% (6-10)	27	38.57		
Good	41-60% (11-15)	42	60	11.08	1.73
Very Good	61-80% (16-20)	1	1.43		
Excellent	81-100% (21-25)	-	-		

Section IV: Analysis of effectiveness of pamphlet on knowledge regarding toilet training of children among mothers of toddler in the selected rural

Table 3: Distribution of Mothers of Toddler with Regards to Level of Post Test Knowledge Regarding Toilet Training of Children

n=70

Level of knowledge score	Percentage score	Frequency (f)	Percentage (%)	Mean	SD
Poor	0-20%	0	0		
Average	21-40%	0	0		
Good	41-60%	6	8.57	16.64	1.03
Very Good	61-80%	64	91.43		
Excellent	81-100%	0	0		

areas.

Section V: Association of post test knowledge regarding toilet training of children among mothers of toddler

Table 4: Significance of Difference Between Knowledge Scores in Pre And Post Test of Mothers of Toddler Regarding Toilet Training of Children

n=70

Test	Mean	SD	Mean Difference	Calculated t-value	DF	Table value	p-value
Pre Test	11.08	1.73	5.55±2.05	22.63	69	1.98	0.0001 S
Post Test	16.64	1.03					

*S-Significant

from selected rural areas of the city with selected demographic variables.

Table 5: Association of Post Test Knowledge Score with Selected Demographic Variables

n=70

Demographic variables	Calculated value			DF	Table value	Level of Significance	Significance
	T-value	F-value	P-value				
Age in years	-	3.50	0.030	2,67	3.07	p<0.05	S
Education	-	1.87	0.16	2,67	3.07	p>0.05	NS
Occupation	-	1.02	0.40	4,65	2.45	p>0.05	NS
Monthly family income	-	0.16	0.91	3,66	2.68	p>0.05	NS
Religion	-	1.18	0.32	3,66	2.68	p>0.05	NS
Type of family	1.28	-	0.28	2,67	3.07	p>0.05	NS
Number of children	-	4.37	0.013	2,67	3.07	p<0.05	S

NS - Not significant S - Significant

DISCUSSION

In October 2018, Keerthi G conducted a study to assess the effectiveness of structured teaching programme on levels of Knowledge regarding Potty Training (Toilet Training) among mothers of Toddlers, residing at Medavakkam Rural Area, Chennai. Quantitative approach was used. This study was conducted with 60 samples, the study design was pre-experimental one group pre test post test design. Convenient sampling technique was applied. Pre test was assessed by using semi structured questionnaires. In pre test (54) 90% of mothers were having inadequate knowledge and (6) 10% of them having moderate knowledge and none of them were having adequate knowledge. After the pre test, structured teaching programme was given regarding toilet training. After 7 days post test was conducted. In post test 13 (21.7%) of them having moderate knowledge and 47 (78.3%) of them having adequate knowledge. The results of the study stated that in post-test after administering structured teaching programme mothers gained 42.67% knowledge score, mean differences were 12.80% by using students paired t-test and generalized McNemar's.[8]

In above study, it is shown that the structured teaching programme was effective in increasing the knowledge of mothers. After administration of structured teaching programme the study revealed that 13(21.7%) of them having moderate knowledge and 47 (78.3%) of them having adequate

knowledge. There was a significant association between knowledge about Toilet Training of Children with age of mothers of toddler, education, monthly income, previous exposure to bowel training programme.

Hence, structured teaching programme was effective, appropriate and feasible. It helps the mothers to give training to toddlers and prevent enuresis and functional constipation among children.

CONCLUSION

Thus, it was concluded that pamphlet on knowledge regarding Toilet Training of Children among mothers of toddler in selected rural areas was found to be effective as a teaching strategy. Hence, based on the above cited findings, it was concluded undoubtedly that the educational intervention by the investigator in the form of pamphlet helped the mothers of toddler to increase knowledge regarding Toilet Training of Children.

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REFERENCES

1. Datta P. Paediatric nursing, 4th edition. New Delhi: Jaypee brothers' medical publishers (p) ltd; 2018. p.122,476.
2. Merriam webster dictionary, https://www.merriam-webster.com/dictionary/toilet%20trainingcited on 2/03/2020 at 00: 15.
3. Wong's. Essentials of pediatric nursing. 1st edition, New Delhi: Reed Elsevier India (p) ltd. 2015. p. 318,320.
4. Michel R. Toilet Training, Paediatrics in review. 1999., https://pedsinreview.aappublications.org/content/20/7/240. cited on 03/03/2020 at 00:29.
5. Nunen K. parents view on toilet training, Journal of child health care: for professionals working with children in hospital and the community. 2013., https://www.researchgate.net/publication/258854600_Parents'_views_on_toilet_training_TT/citation/download cited on 04/03/2020 at 20:18.
6. Reddy N M, Malve H, Nerli R, Venkatesh P, Agrawal I, Rege V. Nocturnal enuresis is India: Are we diagnosing and managing correctly? Indian J Nephrol 2017; 27: 417-26, http://www.indianjnephrol.org/article.asp?issn=0971-4065;year=2017;volume=27;issue=6;spage=417;epage=426;aulast=Reddy cited on 21/02/2020 at 17:11.
7. http://currentnursing.com/nursing_theory/Ernestine_Wiedenbach.html cited on 18/03/2020 at 15: 42.
8. Keerthi G. A Study to Assess the Effectiveness of Structured Teaching Programme on levels of Knowledge regarding Potty Training (Toilet Training) among mothers of Toddlers at residing at Medavakkam Rural Area, Chennai. Master's thesis, College of Nursing, Madras Medical College, Chennai. 2018.., http://repository-tnmgrmu.ac.in/11614/ cited on 03/03/2020 at 23:26.

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Study to Assess the Effectiveness of Olive Oil Massage and Weight Gain among Low Birth Weight Neonates in Govement Kamla Nehru Hospital Bhopal, Madhya Pradesh

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Abstract

Introduction: Nature massage babies in the womb, where contractions rhythmically squeeze and push, providing stimulation to the baby, studies show that more the babies are touched, nurtured and tenderly massaged, the happier and more balanced they grow.[2] Massaging the baby helps to fulfill their emotional, psychological and physical needs. It enhances the bonding, improves sleep patterns, stimulates, circulation, improves digestion, facilitates food absorption results faster weight gain and by constant massaging, the infant level of stress hormones reduces as a result it improves immune function.[4]

Objectives: To assess the pre weight among low birth weight neonates to olive oil massage in experimental and control group; to compare the pre and post test weight among low birth weight neonates to olive oil massage in experimental and control group; to find out the significant association between olive oil massage among low birth weight neonates with selected demographic variables in experimental and control group.

Methodology: The research design used was a quasi experimental design. The samples for the study were chosen using quota sampling technique, 20 in experimental group and 20 in control group. Background factors of each sample were collected by interview and observation method, weight was recorded by electronic weighing machine. The setting was Government Kamla Nehru Hospital, Bhopal. Olive oil massage was done for 10 days in experimental group. Pre and post weight was recorded. Data obtained were edited, organized, analyzed by using SPSS (Version 10) and interpreted by descriptive and inferential statistics.[2]

Results: Gathered data were analyzed based on the objectives using inferential and descriptive statistics with SPSS (Version 10) package Level of probability <0.05 considerd to be significant. There was a significant increase in weight after olive oil massage among low birth weight neonates t = -11.964 (P=0.001) in experimental group. The post test mean weight among low birth weight neonates in experimental and control group was significantly high t–7.035 (P=0.001) was significant.[4] There was no significant association between background factors on mother and neonates and weight gain among low birth weight neonates in experimental group (P > .005). The t value=4.462 (p=0.140) which was not significant.[4]

Conclusion: The findings of the study showed that there was a significant (p<0.05) weight gain in low birth weight neonates after Olive oil massage in experimental group no selected background factors had any significant association. The conclusion of the study was that olive oil massage was effective in weight gain among low birth weight neonates.

Keywords: Low birth weight; Neonate; Olive oil massage; Babies in the womb.

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INTRODUCTION

The miracle of life begins at conception and continuous throughout the life span. The manifestation of this miracle is encountered during new born and infancy. Neonates' period is the crucial period for the infant who is facing many of the physiological adjustment for extra uterine existence. Normal birth weight for a healthy newborn born at term between 38-42 weeks should have an average birth weight 2.7 to 3.1 kg with a mean of 2.9 kg. Neonates born at term or post term may weigh less than 2500 gm is considered to be low birth weight babies.

WHO defines low birth weight as one whose birth weight is 2500 grm or less irrespective of the gestational age very low birth weight infants weigh 1500 gram or less and extremely low birth weight infants weigh 1000grms or less. Incidence of low birth weight is generally highest in those countries where the mean birth weight is low and as such varies from about 5% to 40% of live births .In India about two third of the infants weigh less than 2500 grams. The incidence of low birth weight baby more than 20 million are born each year weighing less than 2500 grams 5.5 pounds according to WHO for 17 percent of all birth in the developing world. A rate more than double the level in industrialized countries 7 percent infants with low birth are at higher risk of dying during the early months and years. Those who survive are liable to have an impaired immune system and may suffer a higher incidence of such chronic illnesses as diabetes and heart disease in later life.

Massage therapy encompasses a wide variety of techniques that manipulates the soft tissue. The word massage is derived from the Latin "massa" or green massein or "masso" meaning or touch therapy is a natural and almost instructive way to care. By lightly touching, rubbing the entire body of the baby causes comfort both physically and psychologically. Nature massage babies in the womb, where contractions rhythmically squeeze and push, providing stimulation to the baby, studies show that more the babies are touched, nurtured and tenderly massaged, the happier and more balanced they grow. Massaging the baby helps to fulfill their emotional, psychological and physical needs. It enhances the bonding, improves sleep patterns, stimulates, circulation, improves digestion, facilitates food absorption results faster weight gain and by constant massaging, the infant level of stress hormones reduces as a result it improves immune function.

Need for the study

Baby massage is useful for the overall development of premature babies. Baby massage is of great help; it indeed makes the baby very active, alert and healthy. It builds a stronger bond between parent and child. Baby massage not only gives the baby love and security; but it also helps the parent to be familiar with baby's visual signs and actions. Baby massage relaxes the baby and helps them to get a good, sound sleep. Massaging the baby improves the digestive system and helps them to pass gas. A good oil massage helps them to be more flexible and even increases the blood circulation. Baby massage helps to improve the immune system and also helps to improve the skin colour of the baby. Olive oil is composed of essential fats and has many uses as a natural medicine. It comes from olive's juice and is rich in oleic acid. It is a great antioxidant with vitamin E, Polyphones and Flavonoids. Its antioxidant action helps to prevent several diseases, such as heart related conditions and some forms of cancer. Olive Baby Massage, Oil Moisturizes infant's skin and helps to protect it from dryness. The luxurious bland of almond oil, jojoba oil and olive oil has been carefully chosen for its calming, nourishing properties. Infant Care Olive oil is one of the only safe choices for natural infant care. It works very well on the dry flaky skin condition on the scalp called cradle cap. It is also a safe and effective alternative to commercial baby oil.

Review of literature: A study conducted on infant massage on term normal babies between the age of 1 to 12 months. All the parents were advised to apply a small amount of Nourishing oil using firm but gentle strokes all over the baby. Which was followed by gentle massage. Parents were asked to bring after 7th and 14th day of massage this study observed a significant reduction in the skin dryness, improvement in the softness of the skin, and skin glow. It was noticed that the Nourishing oil was absorbed rapidly, leaving the baby skin soft with a natural, healthy glow and without any greasy after feel. These beneficial effects might have been due to the synergistic actions skin nourishing, emollient, moistening, soothing, antimicrobial, anti inflammatory and antioxidant of its ingredients. An open randomized controlled study of oil massage in 224 neonates at LTM medical college Mumbai oil Massage using coconut oil versus mineral oil among new born babies weighing between 1500 to 2000 gram and term babies weighing more than 2500 grams massage were given by a trained person from day 2 of life to 31 days. Setting premature

unit and post natal wards babies in each group were randomized to receive massage with coconut oil, mineral oil. or with placebo. Oil massage was given in prone and supine position to include head, neck, trunk and extremities. At the end of the massage kinesthetic stimulation was provided in supine position by passive flexion and extension movements of limb at each large joint massage was given up to 31 days the outcome was assessed by the Brazelton score at baseline day 7 and on 31 coconut oil massage showed a greater weight gain velocity as compared to mineral oil and placebo pre term infants receiving coconut oil massage also showed a greater length gain velocity compared to placebo group no statistically significant difference was observed in the neuro behavioral assessment between all three subgroups in term babies as well as in preterm babies.

Assumption: 1. Low birth weight babies' mothers will give consent for oil massage.

2. Oil massage will not induce any adverse effect on neonates.

Limitations: 1. Who are admitted in the hospital at the time of data collection.

2. Sample selected by convenient sampling method.

Hypothesis:

H_1: There will be a significant difference in mean weight before and after oil massage among low birth weight neonates in experimental group.

H_2: There will be a significant difference between the mean difference in weight gain between low birth weight in experimental and control group

H_3: There will be a significant association between the mean difference in weight and background factors among low birth weight neonates.

METHODOLOGY

Research approach: An evaluative research was considered as an appropriate research approach for the present study.

Research design: The research design in this study was a quasi experimental design.

Variables under study: Independent variable: Olive oil massage

Dependent variable: Weight gain.

Population: Target Population in this study the target populations were low birth weight neonates.

Accessible population: In this research the assessable populations were low birth weight neonates admitted in Kamla Nehru Government Hospital, Bhopal, MP.

Sample and sampling technique

Sample: Low birth weight neonates who were admitted in the Kamla Nehru Hospital Bhopal were the samples for present study.

Sample size: Samples size was 40 (20 in experimental group and 20 in control group).

Sampling technique: The quota sampling technique was used to select the Low birth weight neonates who were admitted in the Kamla Nehru Hospital Bhopal As per the tentative schedule of data collection, the investigator has selected the Low birth weight neonates conveniently after informed consent.

Inclusion criteria

1. Neonates who are at the age of 0-1 month.
2. Who were admitted at the time of data collection

Exclusion criteria

1. Neonates weight less than 1.5 kg and more than 2.5 kg.
2. Neonates who were sick or medically unfit.

Tool preparation

The tool is written device that a researcher uses to collect the data. After careful and detailed review of literature. The researcher prepared and developed an interview /and observation schedule as tool for present study.

Development of tool:

The research instrument consists of three sections:

Section–I: Background Data of Mother

Section–II: Background factors of neonates.

Section-III: Observation schedule on weight of neonates.

Section-I Consisted of selected factors such as age of mother, religion, type of family, educational background, income of the family, Hb status of the mother, nature of work, weight gain by the mother during pregnancy type of delivery

Section-II Consists of factors of neonates such as gestational age, age in days, sex, birth weight,

and condition of the baby at birth, type of feeding, number of feeds / day.

Section-III Consisted of a grid to assess the effect of weight gain among low birth weight neonates of the timing of the olive oil massage.

Validation of the tool: The tool described by the researcher was sent along with the request for validation to 7 experts including 2 pediatricians, and 5 nursing experts. The experts were requested to check for the relevance, sequence, adequacy of language of the tool. The tool was modified according to expert's opinion. The items with 100% agreement were included in the tool. A few items were modified and retained in the tool. The validity of observation by investigator was established from an expert therapist.

Reliability: The reliability of the instrument was established by inter-rater reliability. The tool was administered to 10 individuals simultaneously by 2 nursing personnel and the tool was found to be reliable for the study. The obtained r value was 0.99

Feasibility of the study: The investigator conducted a Pilot study.

Pilot study: Feasibility of study was done among 10 infants who were low birth weight neonates after obtaining permission from the authority. The setting was at Kamla Nehru Government Hospital, Bhopal (MP). It helped the researcher to ascertain the feasibility of the designed methodology. These neonates were not included in the main study.

DATA COLLECTION PROCEDURE

Data were collected from Kamla Nehru Government Hospital, Bhopal (MP) prior permission was sought and obtained from authorities Neonates were selected using purposive sampling method neonates from NICU were the study samples. Based on sample selection criteria purposive sampling method was used. The study purpose and methods were explained to each mothers informed consent was obtained 20 low birth weight neonates were selected in experimental group and 20 in control group. Background data was collected by interview method pre test weight was observed 20 neonates in experimental group were given olive oil massage 5ml/kg of body weight massage for 15 minutes both in the morning and evening. Daily weight was recorded once a day in the morning and recorded in the grid before oil massage weight was recorded by ward staff to prevent bias by the researcher. Massage was done for 10 days for each neonate.

Plan for data analysis: The data were edited, coded and entered in excel sheet. The data were analyzed using SPSS version 10. A probability of less than 0.05 was considered to be significant. The data was analyzed as follows:

1. Background Data were analyzed using descriptive statistics.
2. Test was used to test the difference between the weights among neonates in the experimental control group.
3. Association between mean difference in weight and the Background factors in experimental group was analyzed using Linear Regression.

RESULTS

Organization of the data: The data collected were edited, tabulated, and analyzed interpreted and findings obtained were presented in the form of tables, and diagrams under the following sections.

Section-I: Data on Back ground factors of the mothers.

Section-II: Data on Back ground factors of low birth weight neonates.

Section-III: Data on weight gain of neonates in experimental and control group.

Section-IV: Data on association between mean difference in weight and background factors among neonates in experimental group.

Section-I: Data on Background Factors of the Mothers.

Table 1: Frequency and percentage distribution of mothers regarding background factors

Selected Factors	Experimental (n=20)		Control (n=20)		g2	Sig.P
	Freq.	%	Freq.	%		
Age of the mother						
a. 15-24 years						
b. 25-34 year	14	70	11	55	0.960	P=327
c. 35-44 years	6	30	9	45		NS

Religion						
a. Hindu	14	70	16	80	0.533	P=766 NS
b. Muslim	3	15	2	10		
c. Christian	3	15	2	10		
Educational back ground						
a. Illiterate	6	30	1	5	0.706	P=188 NS
b. Primary	6	30	6	30		
c. Secondary	4	20	6	30		
d. Collegiate	4	20	7	35		
Anemic Status of the mother						
a. Normal	9	45	9	45	0.733	P=693 NS
b. Mild	6	30	6	30		
c. Moderate	5	25	5	25		
d. Severe	0	0	0	0		
Weight gained during pregnancy						
a. >10Kg	10	50.0	14	70	0.921	P=337 NS
b. <10Kg	10	50.0	6	30		

Section II: Data on Back ground factors of low birth weight neonates

Table 2: Frequency and percentage distribution of neonates regarding selected background factors

n=40

Selected Factors	Experimental (n=20)		Control (n=20)		x^2	Sig.P
	Freq.	%	Freq.	%		
Gestational age of the neonateat birth.						
a. <37 weeks	10	50	5	25	2.667	P =102 NS
b. ≥37 weeks	10	50	15	75		
Age of the neonate						
a. 0-6 days	11	55	17	85.0	4.286	
b. 7-14 days	9	45	3	15		
Sex of the neonate						
a. Male	13	65	14	70.0	0.11	P=736 NS
b. Female	7	35	6	30.0		
Condition at birth						
a. Apgar (4-6/minit)	8	40	2	10.0	5.2	P=0.07 NS
b. Apgar 7-10/mimt)	12	60	18	90.0		
Birth order						
a. 1st child	14	70	12	60	1.231	(P=540) NS
b. 2nd child	6	7	7	35.0		
c. 3rd child	0	0	1	5.0		

Section III **A:** Data on weight gain of neonates in experimental and control group

Table 3.1: Mean range, SD, mean difference and 't' value on pre and post test weight among low birth weight neonates in experimental group. **n=20**

Weight	Mean	Range	SD	Mean difference	't' value
Pre-test	1.9566	0.74	0.2322	0.1529	-11.964 P=(0.001)
Post-test	2.1095	0.915	0.2255		

***Section-III* B:** Data on weight gain of neonates in experimental and control group

Table 3.2: Mean difference and't' value regarding weight among neonates in experimental and control group.

n=40

P Groups	N	Mean difference	SD	Difference Inmean	"t" value P
Experimental Group	20	0.1529	0.0571	0.098	7.035
Control Group	20	0.0549	0.0248		P=(0.001)

***Section IV* :** Data on association between mean difference in weight and background factors among neonates in experimental group.

Table 4: Linear regression regarding the mean difference in weight and background factors among low birth weight neonates in experimental group.

Selected back ground factors	Standardized Co-efficient Beta	't' Value	Sig.(P)
Age of the mother	2.753	4.462	0.140
Religion	2.330	2.547	0.137
Type of family	2.878	4.571	0.156
Income of the family	3.875	3.997	0.262
Anemic status of the mothers	2.121	-5.057	0.124
Type of delivery	-0.273	-0.408	0.753
Gestationalage of the neonate	-0.825	-1.097	0.471
Age of the neonateindays	-3.219	-3.976	0.157
Sex of the neonates	-1.238	-2.502	0.243
Birth weight of the neonates	1.925	2.615	0.233
Total number of feeds	**-1.173**	**-1.881**	**0.311**

TESTING OF HYPOTHESIS

H_1: There will be no significant difference in mean weight before and after oil massage among low birth weight neonate in experimental group

Table 3.1 shows the Mean, Range, SD, Mean deviation and't' value regarding the pretest and overall post test weight among low birth weight neonates. The obtained overall post test mean weight 2.10955 (SD=0.2255) was more than the pretest mean weight 1.9566 (SD=0.2322). The obtained mean difference was 0.1529 and 't' value -11.964 P=(0.001). Therefore the null hypothesis H01 was rejected

H_2: There will be no significant difference between the mean difference in weight gain among low birth weight neonates in experimental and control group.

The obtained mean difference of weight is 0.1529 (SD=0.0571) in experimental group was more than the control group M=weight 0.0549 (SD=0.0248) in control group. There was a significant difference in the mean difference between experimental and control group. Therefore, the null hypothesis H02 was rejected.

Summary

- Majority of mothers in experimental and control group were in the age group of 15-24 years, belong to Hindu, nuclear family below poverty line, were moderate workers, had less than 10 Kilograms weight gain during pregnancy, had L.S.C.S delivery, had normal Hb during pregnancy.
- Majority of neonates in experimental control group were more than 37 weeks gestation, less than 6 days of age, male infants, Apgar 7-10/mins Birth order 1st child. Birth weight between 2001-2005 grams, had expressed breast milk pallada feed, and had initiation of feed between ½ - 2 hours after.

CONCLUSION

The findings of the study showed that there was a significant ($p<0.05$) weight gain in low birth weight

neonates after Olive oil massage in experimental group no selected background factors had any significant association. The conclusion of the study was that olive oil massage was effective in weight gain among low birth weight neonates.

DISCUSSION

The results of the study were discussed according to the findings of the study.

Finding 1: Post test mean weight after olive oil massage in experimental group there was a significant increase in weight after olive oil massage among low birth weight neonates t = -11.964 (P = 0.001) in experimental group.

- Post test mean weight after olive oil massage in experimental group was significant there was an increase in the mean weight after olive oil massage t = 11.964 (P = 0.001). The above findings were supported by the studies conducted by Douret v. et. al., (2008) reported that there was a significant increase in weight gain and neurobehaviours development in pre term infants with multimodal stimulation and cutaneous application of vegetable oil.

Finding 2: Findings on post test weight among experimental and control group. It was inferred that neonates in experimental group significantly improved weight after olive oil massage.

- Post test mean weight in experimental group was more 0.1529 control group 0.0549. There was a significant difference in post test mean, post test mean was 0.1529, there was significance t=7.035p=(0.001). The above findings were supported by the studies conducted by Sankaranarayana et. al (2005) reported that there was significant increase in weight after oil massage in experimental group than those of control group those who did not.

Finding 3: Findings on association between the mean differences in weight gain among low birth weight neonates and selected factors among experimental group. It was inferred that there was no significant association between the mean difference in weight gain and background variables among neonates in experimental group Olive Oil massage was independently effective to increase weight of neonates.

- There was no significant association between background factors among low birth weight mothers and neonates P value was P > 0.5.

RECOMMENDATIONS:

The present study recommendations the following in different areas:

- A similar study can be conducted in large group of low birth weight neonates.
- A longer period of intervention can be studied for more reliability and effectiveness.
- It can be practiced in the community settings and hospital setting.

REFERENCES

1. Dutta D, (2002), "Text book of obsteritics and neonates", 4th edition, Jaypee Brothers, New Delhi.
2. O.P. Ghai, (2004), "Essential Pediatric", 6th editionpub op ghai pp153-166.
3. Polit and Hungler (1999), "Nursing Research Principles and Methods", Philadelphia: Lippincott publishers, Pp: 23-24.
4. Arora.J., et.al., (2005), "Effects of oil massage on growth and neurobehavior in very low birth weight preterm neonates", Indian Pediatrics, Vol. 42, 11 November 2005, Pp: 1092-1100.6.
5. Alphonsa J, (2003), "Pediatric Nursing"2nd edition, Indore N.R. Brothers pp153- 161.
6. John P. Cloherty, (2004), "Manual of neonatal care", 5th edition,pp167- 170.
7. Lodermilk, et.al., (1990), "Maternity Nursing", Mosby Publication, 5th edition.pp1053-1082.
8. Lucinda Liofell, (2001), "The book of massage", published by Simon and Schuster, New York, 11th edition, Page. No, 18-22.
9. Meharban Singh, (2004), "Text book on care of new born", 6th edition sager publication New delhi. Pp230-236.
10. Nelson, (2004), "Text Book of Pediatric", 17th edition Elsevier India pvt Ltdpp520- 166.
11. Sundar Rao & Richard (1997), "An Introduction to Biostatistics; a Manual for Students in Health Sciences", 3rd edition, Prentice hall of India Pvt.Ltd, Pp: 16-17.

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Original Article

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Factors Affecting Breast Feeding Pattern among Mothers in a Selected Area Dehradun, Uttrakhand

Jyotsana Masih[1], Mugdha Sharma[2], Upma George[3], Rajesh Kumar Sharma[4]

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Abstract

Introduction: Human milk is uniquely tailored to meet the nutrition needs of human infants. It has the appropriate balance of nutrients provided in easily digestible and bio available forms Every infant & child has the right to good Nutrition according to the 'Convention on the rights of the child. According to the WHO & UNICEF recommend Early initiation with in 1 hour of birth, Exclusive for 6 month & complementary at 6 month with breast feeding up to 2 year of age or Beyond. Approx 44% of infants 0-6 months exclusively breast feed over the period of 2015-2020.

Aim of the study: A study to identify the factors affecting breast feeding pattern among mothers in a selected area Dehradun, uttarakhand.

Methodology: Retrospective exploratory design was used to explore the problem. Total 66 (sixty six) mothers who were fulfilling the inclusion criteria selected by purposive sampling technique and data were collected by interview method.

Result: The study findings show that Lactational, Nutritional, Milk Pumping, Medical & Life Style were the main factors which might be affecting breast feeding pattern among mothers. There was only association between Milk Pumping Factors with socio demographic variable birth weight at 0.05 level of significance.

Conclusion: The study result shows that Mothers who were having infant (0-1 yr) not able to feed two hourly & There must be a need for skill fully manage and try to minimize the risk.

Keyword: Breastfeeding, Factors, Mothers.

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INTRODUCTION

Human milk is uniquely tailored to meet the nutrition needs of human infants. It has the appropriate balance of nutrients provided in easily digestible and bioavailable forms Everyinfant &child has the right to good Nutrition according to the 'Convention on the rights of the child.[1] According to the WHO & UNICEF recommend Early initiation with in 1 hour of birth, Exclusive for 6 month & complementary at 6 month with breast feeding up to 2 year of age or Beyond.[2] Approx 44%

of infants 0-6 months exclusively breast feed over the period of 2015-2020.[3]

The two most important hormones associated with lactation are oxytocin and prolactin Oxytocin, named after the Greek word for "speedy birth," acts in the body as a smooth muscle contractor, facilitating contractions during labour and the release of milk during lactation, Where as Prolactin is the primary hormone responsible for milk production levels increase slowly during pregnancy, triggering changes in the breast tissue that stimulate milk production.[3]

The mother's body releases oxytocin into the blood stream to aid in milk ejection. During the feeding session, when tactile stimulation is received from the nipple, oxytocin and prolactin are released in pulsating patterns, controlled by nerve fibers linked to the hypothalamus.[3] Globally in 2020,149 million children under 5 were estimated to be stunted(too short for age), 45 million ere estimated to be wasted (too thin for height) & 38.9 million were overweight or obese.[4] First 2 year of a child life were important, as optimal nutrition during this period lowers morbidity & mortality, reduces the risk. So optimal breast feeding could save the lives of over 820,000 children under the age of 5 years each year.[5]

Aim of the study

The Aim of the study were as follows:

- To identify the factors affecting breastfeeding pattern among mothers in a selected area of Dehradun, uttarakhand.
- To find association between selected demographic variables and breastfeeding pattern among mothers.

MATERIAL AND METHODS

Retrospective exploratorydesign was used to explore the problem. Total Sixty Six mothers who were fulfilling the inclusion criteria selected by purposive sampling technique and data were collected by interview method. The study was conducted in Keshav Basti village of doiwala block, Dehradun Uttarakhand.

RESULT

Data were analysed under following heading: Maternal Data, Infant Data Pattern of breast feeding.

Variables	Frequency (f)	Percentage %
Acceptance of breast milk during first few days of the birth breastfeed		
a. Yes	65	98.5
b. No	1	1.5
Duration of exclusive breastfeeding		
a. Up to 6 months	57	86.4
b. Less than 6 months	9	13.6
Breastfeeding from both breast in each session		
a. Yes	65	98.5
b. No	1	1.5
Duration of breastfeeding per session		
a. 1-10 mins	40	60.0
b. 11-20 mins	26	39.4
Mode of breastfeeding in first six month of life		
a. On Demand	62	93.93
b. Time Schedule	4	6.06
Time interval		
a. On demand	62	93.93
b. More than 6 hours	4	6.06
Methods of Feeding		
a. Bottle Feed	8	12.1
b. Formula Feed	8	12.1
c. Breast Feed	50	75.8

Table 1(c) revealed that out of 66 Mothers (98.5%) babies were Normally accepted breast milk in starting few days of the birth. Majority (86.4%) babies were exclusively breastfeed upto 6 month (98.5%) were breastfeed with both breast and (60.6%) Participants used for breastfeeding 1-10 min in per session. (93.93%) mothers provided demand feed in first six month. Majority (93.93%) were demand feed on specific time interval. (6.06%) babies were feeded more than 6 hours (75.8%) babies were breast feeded with breast milk only.

(Lactational, Nutritional & Milk Pumping)

To assess factors affecting breast feeding pattern Likert scale was used to collect data, it consists of 26 statements. For the purpose of research, investigator has divided 26 statements in 8 sections.

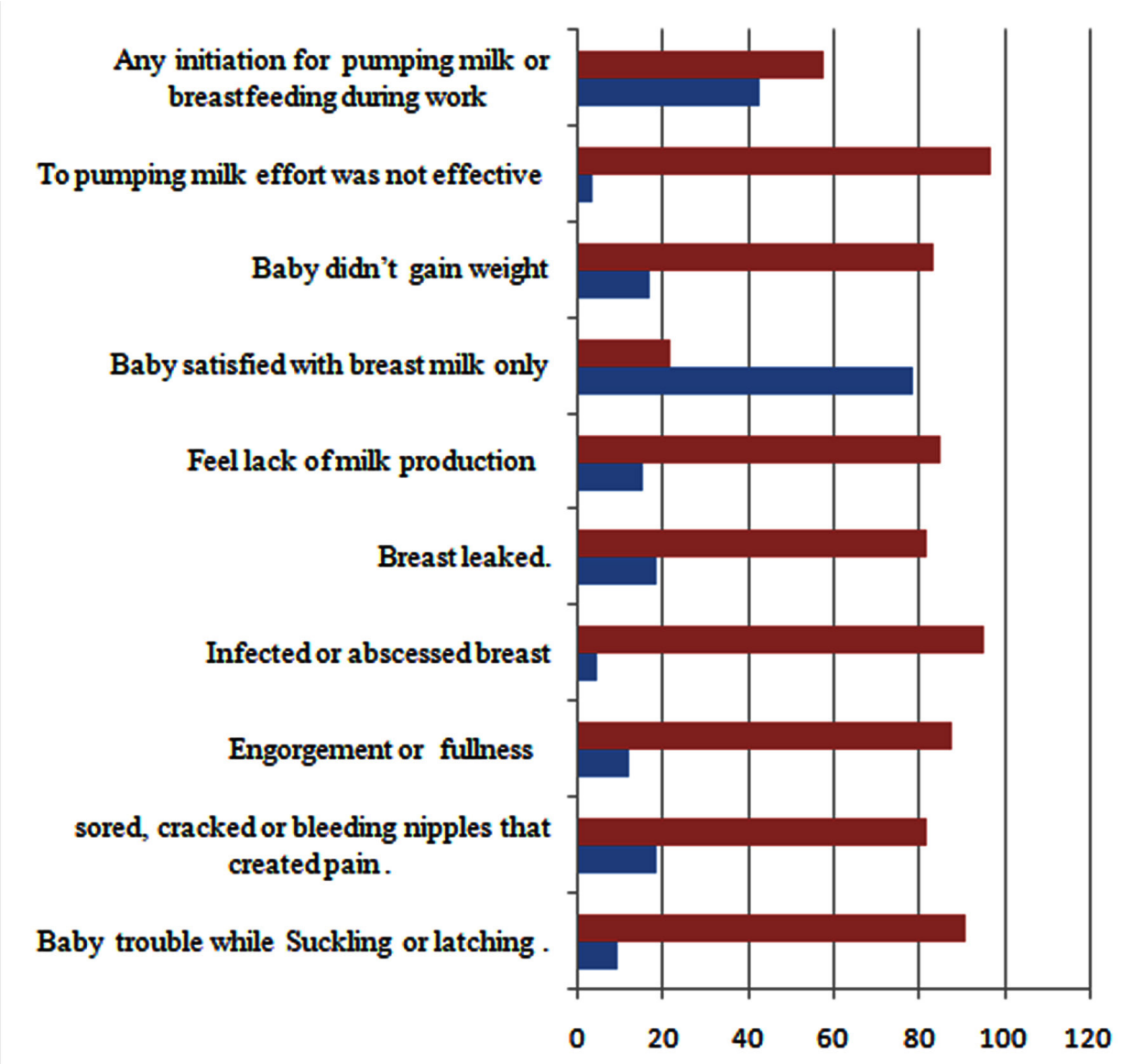

Fig. 1: Factors affecting breast feeding pattern among mothers

Fig. 1 Factors affecting Breast feeding among mothers (Lactational, Nutritional, Milk pumping) Blue denote = Yes, Red Denote =No

Fig. 1 shows that (18.2%) were having cracked & Sore nipples (9.1%) babies were facing trouble while suckling or Latching (4.5%) had infected or Abscess breast (78.8%) babies weresatisfied with breast milk (24.2%) mothers had trouble to milk flow to start (16.7%) said that there baby didn't gain weight & Majority (57.5%) mother's didn't take any initiation for pumping milk or breast feeding during work.

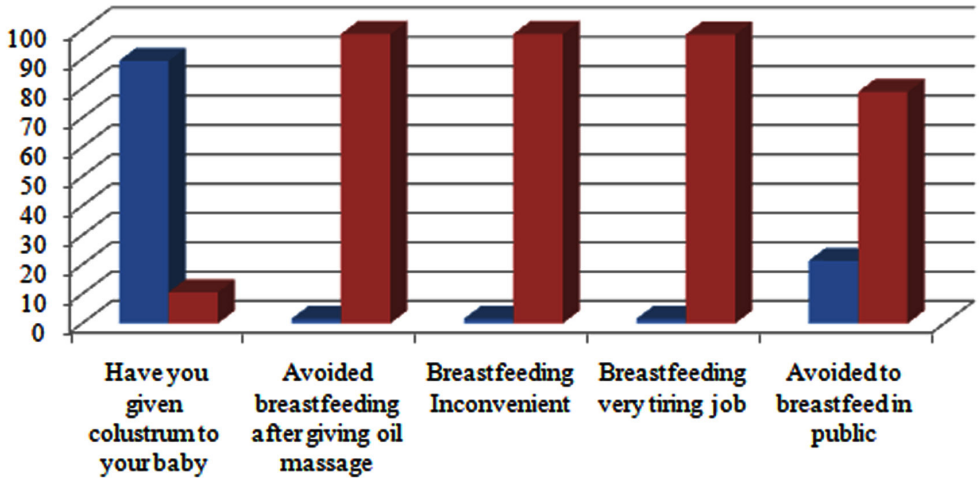

Fig. 2: Factors Affecting Breast feeding Pattern (Psychological Factors) Blue denote = Yes, Red Denote =No

Fig. 2 Reveals That approximately (71.3%) mothers avoided breast feeding immediately after their bath (10.6%) were not given colustrum to their baby (98.5%) mother's didn't feel breast feeding was inconvenient (1.5%) felt breast feeding was tiring job and (78.8%)didn't avoided breast feeding their baby in public.

When we see the association between Socio demographic Variables with Maternal factor It Shows that only birth weight were significantly associated (p=0.038 i.e P<0.05) with milk pumping factor remaining other variables (like age, mother education, working hour, type of delivery, sex of baby) were not significantly associated with milk pumping factor. There fore it was found that only the birth weight was significantly associated with milk pumping factor.

DISCUSSION

A. Factors affecting pattern of breast feeding

Study revealed that majority number (98.5%) babies were accepted breast milk during first few days of birth. Nearly (98.5%) babies were breast feeded from both breasts in each session and (60.6%) were breast feeded 1-10 min in per session and most of the babies (93.93%) babies were breast feeded on demand and only(6.06%) feeded at time interval in first six month of life. Majority (75.8%) babies were feeded by breast only. In Contrary to the findings of the previous study by Vyas S, Sharma P, Kandpal SD, Semwal J, Srivastava A, Nautiyal Vin (2012)[6] stated that 159(51.46%) were given pre-lacteal feed and 177(49.44%) were breast feed from both breast were as 58(43.61%) feeded upto 10 mins. 219(52.52%) were breast feeded on demand. Only 19(37.26%) were breast feeded at regular interval and Majority 177 (49.44%) babies were feeded by breast only.

Lactational factor

In present study few (18.2%) were having cracked & sore nipples and leaked breast in very few babies (9.1%) were facing trouble while suckling or latching, few of them (4.5%) had breast infected or abscess. Similar findings were reported by Saxena P, PalS, Salhan S, Sarda N stated that (90%) mothers have breast engorgement (11%) have cracked nipples, only (1%) breast were abscess.[7]

Nutritional factor

The findings of the study revealed that only (24.2%) mothers had trouble for milk flow to start and (16.7%) mothers said that there baby didn't gain weight and only (10.6%) reported that any health professional said that there baby was not gaining weight. This result was supported by Saxena P, Pal S, Salhan S, Sarda N stated that (6.1%) have Inadequate milk output.[7]

Milk pumping factor

In present study findings Few (3.0%) mothers have tried pumping milk but efforts was not effective as much as required and Majority (57.5%) mothers didn't take any initiation for pumping milk or breast feeding during work. Similar result was supported by Saxena P, Pal S, Salhan S, Sarda N stated that (22%) were working mothers and not taking proper

efforts for pumping milk or breastfeeding during work.[7]

Medical factor

In present study nearby (4.5%) mothers were stoped feeding as they wanted to conceive or wanted to become pregnant. Study findings are supported by Catherine R L, BrownDL, Alexander L, Bryanton J, Semenic S8 stated that 10.4(7.9-13.4%) mothers & babies were have medical conditions.

Social factor

In present study approximately (71.3%) mothers avoided breast feeding immediately after bath and (10.6%) were not given colustrum to their baby. Only (1.5%) avoided breast feeding after giving oil massage to their baby. Similar study result supported by Vyas S, Sharma P, Kandpal S D, Semwal J, Srivastava A, Nautiyal Vl stated that 212 (51.96%) were feed their baby with colustrum.[6]

B. Association between selected demographic variables and breastfeeding pattern among mothers

In present Study found that there is significantly association between birth weight (Fisher Exact P=0.038) with milk pumping factor as measured at level P< 0.05 level of significance. Similar findings supported by Ahmadi M & Moosavi SM stated that (53.78%) Mothers where pumped breast milk because they return to work.[9]

CONCLUSION

The study result shows that Mothers who having infants (0-1 yr) were not able to feed two hourly & There must be a need for skillfully manage and try to minimize the risk. So future studies can be conducted.

REFERENCES

1. Varghese Achamma, Ukande Usha, Vijayan Shreeja, Chandel Rakhi. Knowledge and practice of postnatal mothers regarding breast feeding .Nursing Research Society of india.2013 June, 6(1): [20-23].
2. ICY DYT Fong, M Heys, ILyLee, A Sham Tarrant .Profesional breast feeding support for first time mothers .obstetric general.2014 May 26:[1673-1681]Available at: online liberary. wiley.com/doi/10.1111/1471-0528.12884/abstract.
3. Holbrook Hann Jennifer, Schetter Dunkelchris, Haselton Martie.Breast feeding and Maternal mental and Physical health.2012; 39(45): [414-417].Available at. www.ssnet.ucla.edu/comm/haselton/unify-uploads/files/Hshn-Holbrook%20et%20al%20in%20 press % 20 women % 20health % 20 Psychology. pdf.
4. Akour AL Ahmad, Okour Abidhakeem, Aldebes Roba. Factors associated with exclusive breast feeding practices among mothers in Syria. British. Journal of medicine & Medical research. 2014. feb 4(14): [2713-2724] Available at: Al-Akour 4142013BJMMR8395-1(1).pdf
5. W T Lee, S S Lui, Vchan, E Wong, J Lau. A population based survey on infant feeding practice (0-2) year in Hong kong.breastfeeding rate and pattern among 3,161infants below 6 month old. Asia 2006, 15(3): [377-87] Available at:www.ncbi.nlm.nih.gov/pubmed/16837431.
6. Vyas Shaili, Sharma Parul,Kandpal S D,Semwal J, Srivastava A, Nautiyal V, 2012April-June; 3(2):[283286]Availableat:www.njcmindia.org/home/download/257.
7. Saxena Pikee, Pal Sumita, Salhan Sudha, Sarda Nivedita Contemporary breast feeding practices.2006.July-Dec.37(3&4):[170-176] Availableat:medind.nic.in/ibl/t06/i3/iblt06i3p170.pdf
8. Catherine R L, Brown, Dodds Linda, Alexandra Legge, Bryanton Janet, Semenic Sonia. Factors influencing the reasons why mothers stop breast feeding .2014.May-June, 105(3): [179-184]Availableat:Journal.cpha.ca/index.php/cjph/article/view/4244
9. Ahmadi M, Moosavi S.Evaluation of occupational factors continuation of breast feeding and formula initiation in employed mothers.Global. Journal of health science 2013.5(6):[166-171] Available at:www.ncbi.nlm.nih.gov/pubmed/24171884

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Factors Associated with Mortality of Neonates Admitted to a Tertiary Care Neonatal Unit

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Abstract

Background: The neonatal period is the most susceptible phase of life. In the aim of this study was to assess the causes and factors associated with neonatal mortality.

Methodology: This study was a Retrospective study of medical records for 2 years (Jan. 2020- Dec. 2021). The age, sex, gestational age, and morbidity and mortality profile of all SNCU admissions in 1 year were determined, and the difference between inborn (those born in Hospital) and out born (neonates delivered outside and referred) was calculated.

Results: Of the 1600 neonates admitted, 61.5% neonates were males, 57.4% were Inborn and 42.8% were outborn. Approximately, 33.4% were preterm, and renal cardiovascular (20.4%), Neurological disorder (18.6%), and Respiratory related infection (19.1%) were the chief morbidities. The chief causes of mortality were low birth weight with AOR 1.29 (0.836-2.0120), respiratory support that includes O2 with AOR 5.817 (3.367-10.051), CPAP with AOR 4.902 (2.745-8.754), CMV with AOR 4.251(2.184-8.274) and Level of Care with AOR 4.85 (3.102-11.471). This factor was statistically associated with neonatal mortality.

Conclusion: Low birth weight, respiratory support, neonate size, and degree of care were all found to be associated with newborn mortality in this study. As a result, hospitals ought to emphasize enhancing antenatal, intrapartum, and standardized care for newly admitted infants. A prospective study is what we suggest.

Keyword: Low birth weight; Respiratory support; Neonate size; Degree of care.

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INTRODUCTION

The first 28 days of life the neonatal period is the most vulnerable time for a child's survival. The risk of death in the first four weeks of life is 30 times higher than the risk of death in the post-neonatal period, which lasts from one month to 59 months.[1] During labor or the first 24 hours following birth, over 40% of newborn deaths occur. Prematurity (35%) is the leading cause of newborn fatalities, followed by newborn infections (33%), birth

asphyxia (20%), and congenital deformities (9%).[2]

India is home to roughly of the world's annual childbirths, with 25 million babies born each year. One of those newborns dies every minute. In the year 2020, 2.4 million children will have died in their first month of life around the world.[3] Every day, over 6700 newborns die, accounting for 47 percent of all child mortality under the age of five, up from 40% in 1990.[1,4]

Since 1990, the globe has achieved significant gains in terms of child survival. Neonatal fatalities worldwide have decreased from 5 million in 1990 to 2.4 million in 2020. However, neonatal mortality decreased at a slower rate than post-neonatal under 5 mortality from 1990 to 2020.[4,5]

Various strategies and policies have been explored around the world to minimize neonatal, infant, and under-five mortality. These include the Millennium Development Goals (MDG-4), which were implemented in 2015 to reduce child mortality by three quarters.[6,7] The second one is Goal 3 of the Sustainable Development Goals (SDGs-3) has 13 specific aims for reducing the impact of poverty.[6]

By 2030, newborn mortality will have decreased to 20 to 12 fatalities per 1000 live births. India has seen a decrease in infant mortality over the last decade, but the observed rate has been slower than projected.[8,9] The Indian government identified the need for a 30–50 percent increase in neonatal care centers in 2011. As a result, the Ministry of Health and Family Welfare built 448 new Sick Newborn Care Units (SNCU) with level 2 facilities, totaling 6408 beds, and supporting over 6,00,000 newborns by 2013.[10] In NICU settings, there is still a significant shortage of competent personnel with adequate infrastructure. To keep up with the present volume of preterm newborns, NICUs still require more trained clinical labors.[11]

As a result, the current study was carried out to provide basic data to care givers and health planners to develop treatments to reduce newborn morbidity and mortality. It was also done to measure and analyze the level of newborn care in a tertiary referral center in Karnataka.

METHODS AND MATERIALS

Participants

A retrospective study was conducted to determine the factors associated with neonatal mortality among neonates admitted to NICU in JSS Hospital, Mysuru. This study was conducted to retrieve data over two years, from January 2020 to December 2021. A functional incubator, a ventilator bed, admission beds, 4–6 qualified nurses, and at least one pediatrician are all included in NICU. All live-born neonates admitted to the neonatal intensive care unit (NICU) for whatever cause, whether born in or out of the hospital or referred from another hospital, for less or equal to 28 days, admitted into the neonatal intensive care unit (NICU) for any reason from January 2020 to December 2021 were eligible for this study. Neonates whose discharge summary sheet did not clearly show whether they were alive or dead, neonates >28 days of life admitted in the Neonatal Intensive Care Unit (NICU), and cases of DAMA (discharge against medical advice) were excluded from this study. Because these neonates were difficult to measure their outcomes. Besides, the medical records of the mothers were taken into consideration for medical problems during pregnancy from the medical logbook.

DATA COLLECTION AND PROCESS

The data extraction checklist was adjusted after checking the NICU admission log book and discharge summary books. The checklist for chart review was created. It is made up of sociodemographic traits (sex, age of neonates, mode of delivery) as well as fetal factors (Birth weight, status at birth, diagnosis of disease, gestational age). The data collectors first looked over the neonates' medical records to see if they met the inclusion requirements.

DATA PROCESSING AND STATISTICAL ANALYSIS

The collected data were coded, checked for completeness, and cleaned for errors. After that, the data was loaded into Microsoft Excel and then exported to SPSS version 23.0 for statistical analysis. The normality assumptions were verified. Texts, tables, frequency, mean, and standard deviation were used to present the results of descriptive statistics.

The bivariable logistic regression analysis was done to identify variables that have a p-value of less than 0.05 to be considered in the multivariable logistic regression analysis model. Thus, we have used the clinical significance of predictor variables, the absence of multi-collinearity between independent variables, and variables with a p-value <0.05, the bivariate analysis and model adequacy to select and enter independent variables into the final model.

Then, a multivariable logistic regression analysis was done to identify factors associated with neonatal mortality. The final model's results were presented as adjusted odds ratios with corresponding 95% confidence intervals. Finally, at a p-value of 0.05, a statistically significant level was announced.

Ethical consideration

Ethical clearance was obtained from the ethical review board (ERB) of JSSAHER (JSS Academy of Higher Education & Research), Mysuru. Finally, the institution provided an official authorization letter to proceed with the data collection. Because the data was acquired through medical chart review, informed permission was not required for this study. Personal identifiers were avoided, and records were kept in a secure way to protect confidentiality.

RESULT

During the study period, 1787 newborns were admitted to the NICU, with 113 neonates leaving against medical advice and 74 neonates having incomplete records and being excluded from the study. For this study, a total of 1600 newborns with results of improved/ death were included.

Sociodemographic characteristics: (Table 1)

According to the findings in Table 1, 985 (61.5%) of the neonates were males, while 615 (38.4%) were females, resulting in a male to female ratio of 1.6:1. 1308(93.4%) neonates were admitted within the first 7 days of their lives, and 292 (6.6%) were admitted within the first 8–28 days of their lives. The highest number of neonatal admissions was recorded in 2020, accounting for more than half (50%) of all neonatal admissions evaluated. Inborn neonates (those born in the same hospital) account for 916 (57.3%) of those admitted to the NICU, while outborn neonates (those referred from another facility) account for 684 (42.8%). Furthermore, mode of delivery is an essential criterion for neonates; in this study, 1107(69.9%) deliveries were done using LSCS and the remaining 493 (30%) were delivered via NVD+AVD.

Table 1: Sociodemographic characteristics of study participants admitted in NICU

Characters	Response	Frequency	Percentage
Sex of neonate	Male	985	61.5%
	Female	615	38.4%
Age of Neonates (in days)	=<7 days	1308	93.4%
	>7 days	292	6.6%
Number of cases admitted and year of admission at NICU	2020	1052	65.75%
	2021	548	34.25%
Source	Inborn	916	57.3%
	Outborn	684	42.8%
Mode of Delivery	AVD+NVD	493	30%
	LSCS	1107	69.9%

Table 2: Fetal health conditions and causes of neonatal admission in NICU

Variable	Category	Frequency	Percentage
Weight (gm)	=<2500 gm	794	49.6%
	>2500 gm	806	50.3%
Gestational age (week)	=<37 weeks (preterm)	877	54.8%
	>37weeks (term)	723	45.2%
Size of Neonates	AGA	1387	86.6%
	LGA+SGA	213	13.3%
Causes of neonatal admission in the NICU	Preterm	535	33.4%
	Renal cardiovascular Condition	329	20.5%
	Neurological condition & infection	297	18.6%
	Respiratory Condition	305	19.1%
	others	134	8.4%

Max respiratory support	O2	480	30%
	CPAP	513	32%
	CMV	98	6.1%
	NONE	509	31.6
Level of care	L2+SPL CARE	425	26.5%
	L3	1175	73.4%

Association of neonatal mortality with low Birth weight (p=0.001), [odds ratio (OR) 1.925 (1.303-2.845)], and Outborn source (p=0.042), [odds ratio (OR) 1.476 (1.014-2.148)] were detected by univariate analysis (Table 3). However, Respiratory Support-CMV with a p-value of 0.00 [odds ratio (OR) 5.623 (3.288-9.616)], Size of neonates (AGA) with p-value 0.004, [Odds ratio (OR) 1.957 (1.234-3.105), were all associated to neonatal death with a lower degree of odds.

Table 3: Univariate regression

Variable	Catagory	Neonatal mortality		COR (95%CI)	p-value
		Yes	No		
Age	=< 7 days	98	1210	1.101 (0.551-1.498)	0.704
	>7 days	20	272	1	
Gestational period	=<37 weeks	73	804	1.361 (0.931-2.011)	0.111
	>37 weeks	45	678	1	
Birth weight	=<2.5kg	76	718	1.925 (1.303-2.845)	0.001
	>2.5kg	42	764	1	
Source	Inborn	57	859	1	0.042
	Outborn	61	623	1.476 (1.014-2.148)	
Gender	Male	80	903	1.400 (0.936-2.094)	0.102
	Female	37	577	1	
Level of care	L2+ Spl care	1	424	1	0.000
	L3	117	1058	46.888 (6.529-336.741)	
Mode of delivery	AVD+NVD	33	457	1	0.496
	LSCS	85	1022	1.156 (0.762-1.753)	
Respiratory support	O2	29	451	0.782 (0.475-1.285)	0.332
	CPAP	39	474	0.448 (0.253-0.795)	0.006
	CMV	31	67	5.623 (3.288-9.616)	0.000
	NONE	17	488	1	
Size of neonates	AGA	92	1295	1.957 (1.234-3.105)	0.004
	LGA+SGA	26	187	1	
Disease	Preterm	38	497	1.062 (0.500-2.254)	0.876
	Renal cardiovascular Condition	17	312	0.757 (0.329-1.743)	0.513
	Neurological condition & infection	26	271	1.333 (0.607-2.927)	0.475
	Respiratory Condition	28	277	1.404(0.643-3.063)	0.394
	others	9	125	1	

In multivariate analysis, only four variables remained significant. All 4 variables (Birth weight, Respiratory support, Size of neonates, and Level of care) have shown an association with neonatal mortality. Birth weight less than or equal to 2.5kg has a significant p-value of 0.025 [adjusted odds ratio 1.297 (0.836-2.012)], Respiratory support has a significant p-value of 0.00 [CPAP AOR- 4.902(2.745-8.754), CMV AOR – 4.251 (2.184-8.274)], Size of neonates (AGA) with p-value 0.011, the adjusted Odds ratio is 0.513 (0.308-0.856) and Level of care with p value 0.00 [adjusted odd ratio 4.85 (3.102-11.471)] was associated with a decreased degree with neonatal mortality. These variables are showing a protective effect (AOR<1) on neonatal mortality.

Table 4: Multivariate regression

Variable	Category	AOR (95% CI)	P-value (significance)
Birth weight	=<2.5kg	1.297 (0.836-2.012)	0.025
	>2.5kg	1	
Source	Inborn	1	0.119
	Out born	1.375(0.954-2.053)	
Respiratory support	O_2	5.817 (3.367-10.051)	0.00
	CPAP	4.902(2.745-8.754)	
	CMV	4.251(2.184-8.274)	
	NONE	1	
Size of neonates	AGA	0.513(0.308-0.856)	0.011
	LGA+SGA	1	
Level of care	L2+SPL CARE	1	0.00
	L3	4.85(3.102-11.471)	

DISCUSSION

The documentation of mortality data is critical and valuable to healthcare providers, investigators, researchers, and decision-makers to devise interventions for prevention and treatment, hence enhancing care quality. The majority of published data studies on neonatal mortality have been undertaken in well-equipped tertiary hospitals' newborn units and at community levels around the world.[12,13]

A total of 1600 neonates were included in our study, with 118 of them reporting fatality.

Multivariate logistic regression found that Low Birth Weight (≦2500 grams), Respiratory support, size of neonates, and Level of care were associated with neonatal mortality.

Any mechanical ventilation or noninvasive respiratory support that provides positive end-expiratory pressure, such as continuous positive airway pressure, biphasic continuous positive airway pressure, high flow of air or oxygen (>1.5 L/min), non-invasive intermittent positive pressure ventilation, and noninvasive high-frequency oscillation, was defined as respiratory support (RS).[14] Newborns with RDS often required respiratory support. This study demonstrates that newborns who were on CPAP and CMV support were more prone to mortality. Stabilizing newborns with RDS on non-invasive respiratory support (NRS) such as continuous positive airway pressure (CPAP) and subsequently initiating surfactant therapy in selected neonates with an increased oxygen need has become standard practice.[15]

The first month is the most crucial period for child survival. Neonatal mortality continues to remain high with little improvement over the years. These infants when admitted to the neonatal intensive care unit (NICU) need numerous interventions depending upon the severity of sickness and postnatal course like need of mechanical ventilation (MV) or noninvasive ventilation, surfactant administration, placement of central lines, total parenteral nutrition, and numerous medications. The duration of NICU and hospital stay of these high-risk infants varies from a few days to a few weeks to a few months. Long stay in the hospital leads to high hospital bills and increases the cost of neonatal care substantially.

Neonatal ventilation is an integral component of care delivered in the neonatal unit. The aim of any ventilation strategy is to support the neonate's respiratory system during compromise while limiting any long-term damage to the lungs. Understanding the principles behind neonatal ventilation is essential so that health professionals caring for sick neonates and families have the necessary knowledge to understand best practices. Many factors can influence clinical decision making on both an individual level and within the wider perspective of neonatal care.

Despite advancements in technologies and interventions made for improving the life of newborns, neonatal death remains an unfinished agenda as a serious public health concern in developing countries.

Preterm births are those that occur before 37 weeks of pregnancy. In India, about 3.5 million babies are born pre-maturely, 1.7 million have birth abnormalities, and one million newborns are discharged from Special New-born Care Units each year (SNCUs). These infants are still in danger of death, stunting, and developmental delays.[3] Premature deliveries are responsible for 75% of

perinatal death and more than half of long term morbidity.[20] Poor nutrition before and throughout pregnancy is one of the pregnancy related variables linked to premature birth. During pregnancy, avoid smoking and excessive alcohol use. Infections of the urinary tract and amniotic membranes are also associated with preterm birth.[20] Preterm care can reduce the burden of mortality, care includes -Preterm and full-term babies with low birth weights that require extra warmth and feeding support. Kangaroo mother care is a good way of doing this.[21]

CONCLUSION

Low birth weight, Respiratory support, size of neonates, and Level of care were all found to be associated with neonatal mortality in this study. As a result, health care facilities should focus on enhancing antenatal, intrapartum, and standardized care for admitted neonates. A prospective study is suggested.

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REFERENCES

1. Newborn and child health [Internet]. [cited 2022 Apr 16]. Available from: https://www.unicef.org/india/what-we-do/newborn-and-child-health.
2. Newborn Mortality [Internet]. [cited 2022 Apr 16]. Available from: https://www.who.int/news-room/fact-sheets/detail/levels-and-trends-in-child-mortality-report-2021.
3. Neonatal mortality [Internet]. UNICEF data. [cited 2022 Apr 16]. Available from: https://data.unicef.org/topic/child-survival/neonatal-mortality/
4. Rammohan A, Iqbal K, Awofeso N. Reducing Neonatal Mortality in India: Critical Role of Access to Emergency Obstetric Care. PLOS one. 2013 Mar 27;8(3):e57244.
5. Data Warehouse [Internet]. UNICEF DATA. [cited 2021 Dec 21]. Available from: https://data.unicef.org/resources/data_explorer/unicef_f/.
6. Transforming our world: the 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs [Internet]. [cited 2022 Apr 16]. Available from: https://sdgs.un.org/2030agenda.
7. World Health Organization. World health statistics 2018: monitoring health for the SDGs, sustainable development goals [Internet]. World Health Organization; 2018 [cited 2022 Apr 16]. viii, 86 p. Available from: https://apps.who.int/iris/handle/10665/272596.
8. Kumar M, Paul VK, Kapoor SK, Anand K, Deorari AK. Neonatal Outcomes at a Subdistrict Hospital in North India. J Trop Pediatr. 2002 Feb 1;48(1):43–6.
9. Rakholia. Neonatal morbidity and mortality of sick newborns admitted in a teaching hospital of Uttarakhand [Internet]. [cited 2021 Dec 20]. Available from: https://www.cjhr.org/article.asp?issn=2348-3334;year=2014;volume=1;issue=4;spage=228;epage=234;aulast=Rakholia.
10. Singh H, Yadav G, Mallaiah R, Joshi P, Joshi V, Kaur R, et al. iNICU – Integrated Neonatal Care Unit: Capturing Neonatal Journey in an Intelligent Data Way. J Med Syst. 2017 Jul 26;41(8):132.
11. Neogi SB, Malhotra S, Zodpey S, Mohan P. Challenges in scaling up of special care newborn units-lessons from India. Indian Pediatr. 2011 Dec 1;48(12):931–5.
12. Saini N, Chhabra S, Chhabra S, Garg L, Garg N. Pattern of neonatal morbidity and mortality: A prospective study in a District Hospital in Urban India. J Clin Neonatol. 2016 Jul 1;5(3):183.
13. Bokade CM, Meshram RM. Morbidity and mortality patterns among outborn referral neonates in central India: Prospective observational study. J Clin Neonatol. 2018 Jul 1;7(3):130.
14. Isayama T, Lee SK, Yang J, Lee D, Daspal S, Dunn M, et al. Revisiting the Definition of Bronchopulmonary Dysplasia: Effect of Changing Panoply of Respiratory Support for Preterm Neonates. JAMA Pediatr. 2017 Mar 1;171(3):271–9.
15. Ramaswamy VV, More K, Roehr CC, Bandiya P, Nangia S. Efficacy of noninvasive respiratory support modes for primary respiratory support in preterm neonates with respiratory distress syndrome: Systematic review and network meta-analysis. Pediatr Pulmonol. 2020;55(11):2940–63.
16. Steer P. The management of large and small for

gestational age fetuses. Semin Perinatol. 2004 Feb;28(1):59–66.

17. Moraitis AA, Wood AM, Fleming M, Smith GCS. Birth weight percentile and the risk of term perinatal death. Obstet Gynecol. 2014 Aug;124(2 Pt 1):274–83.
18. Kim SY, Sharma AJ, Sappenfield W, Salihu HM. Preventing large birth size in women with preexisting diabetes mellitus: The benefit of appropriate gestational weight gain. Prev Med. 2016 Oct;91:164–8.
19. Luoto R, Kinnunen TI, Aittasalo M, Kolu P, Raitanen J, Ojala K, et al. Primary Prevention of Gestational Diabetes Mellitus and Large-for-Gestational-Age Newborns by Lifestyle Counseling: A Cluster-Randomized Controlled Trial. PLOS Med. 2011 May 17;8(5):e1001036.
20. Goldenberg RL, Culhane JF, Iams JD, Romero R. Epidemiology and causes of preterm birth. The Lancet. 2008 Jan 5;371(9606):75–84.
21. Newborn health: Caring for preterm babies [Internet]. [cited 2022 May 5]. Available from: https://www.who.int/news-room/questions-and-answers/item/newborn-health-caring-for-preterm-babies.

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A Comparative Study to assess the Prenatal Factors of the Mothers who have Delivered Term and Preterm Babies at RMMCH, AU, Chidambaram

Rajalakshmi Murthi

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Abstract

The purpose of this study is to examine the correlation between prenatal factors and the type of delivery among postnatal mothers. The sample consists of 100 postnatal mothers (Group I - 50 preterm deliveries), (Group II - 50 term deliveries). The researcher used the quota sampling technique for this study, and the content validity was obtained from experts in the various nursing specialties. The investigator prepared a structured interview questionnaire method for data collection. The study revealed that the following factors were promoting term delivery as regular antenatal check-ups, routine household activities, adequate diet, rest and happiness, caring by the family members during pregnancy, and monthly income of more than Rs. 2001-6000. It was also found that some factors were influencing preterm delivery such as joint family, history of abortion at one time, age at first pregnancy were between 18 – 21 years, inadequate antenatal check-ups especially in the third trimester, monthly income between Rs. 1001 – 2000, consanguinity,antepartum haemorrhage, twin pregnancy, oligohydramnios, job, and inadequate sleep then rest during pregnancy.

Keywords: Preterm; Full term; Correlation; Prenatal factor.

INTRODUCTION

We worry about what a child will become tomorrow, yet we forget that he is someone today" - *Stacia* (2010)

Childbirth is one of the most marvellous and memorable moment in a woman's life. It does not really matter, if the child is the first, second or the third one. Each experience is unique and calls for a celebration. The fear and anxiety about childbirth often prevents most women from enjoying this experience. However, an adequate knowledge about the signs of labour and delivery, in general, can impart a feeling of confidence and a sense of emotional well being, very crucial in ensuring a successful labour.

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Need for the Study

According to WHO (2007) the incidence of preterm birth in India is estimated to be 11-14% (2004). This means that the annual incidence preterm birth in our country is about 3 to 4 million and it is a huge number.

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Harish (2007) highlighted the fact that preterm birth is a major challenge in perinatal health care and yet an unmet challenge. Preterm birth is high risk for perinatal morbidity, mortality and later on neuro developmental disabilities and adverse respiratory outcome. Prematurity not only affects the neonates and their families, but also has a lot of implications for the health services as these babies have to spend several weeks in the hospitals.

Freak, Chan, Tucker and Street. (2009) conducted a population study of previous abortion and risk of preterm birth. The aim of the study was to analyse whether previous abortions is the independent risk factor for preterm birth and to calculate the attributable risks for risk factors. They used multi-variable logistic regression analysis and compared preterm with term births. They found many risk factors such as smoker, age 40 years or older, reproductive technologize assistance APH and UTI. The results revealed that previous spontaneous abortion borderline significance and previous induced abortion was an independent risk factors, population attributable risks were highest for pregnancy hypertension (12.4%) and APH (9.2%). The authors quoted that previous induced abortion and smoking during pregnancy are preventable risk factors for pre-term birth.

Objectives

- To assess the prenatal factors of the mothers who have undergone preterm delivery (Group — I).
- To assess the prenatal factors of the mothers who have undergone full term delivery (Group — II).
- To compare the prenatal factors between mothers who had preterm delivery and mothers who had full-term delivery
- To prepare a booklet for the pregnant women on prevention of preterm delivery.

Research Variables

Variables differs from one person to another, the presumed effect is the dependent variables, (or) outcome. In this study the research variables are prenatal factors and type of labour.

Research Design

Retrospective study design was used to assess the prenatal factors 3, (social factors, personal factors, psychological factors) related to preterm, and full-term delivery of the mothers admitted in the obstetric gynaecology ward in RMMCH.

Setting of the Study

This study was conducted in the Obstetric and Gynecological ward Rajah Muthaiah Medical College Hospital, Annamalai university, Chidambaram Tamil Nadu State.

Sample Size

A total of 100 postnatal mothers were taken for the main study.

Measurement and Tools

A structured interview schedule was used to assess the prenatal factors and types of delivery among the postnatal mothers Both descriptive and inferential statistics were used for data analysis.

Findings

Section-1

Table 1: Distribution of Demographic Characteristics of Postnatal Mothers in Both Groups.

N = 100

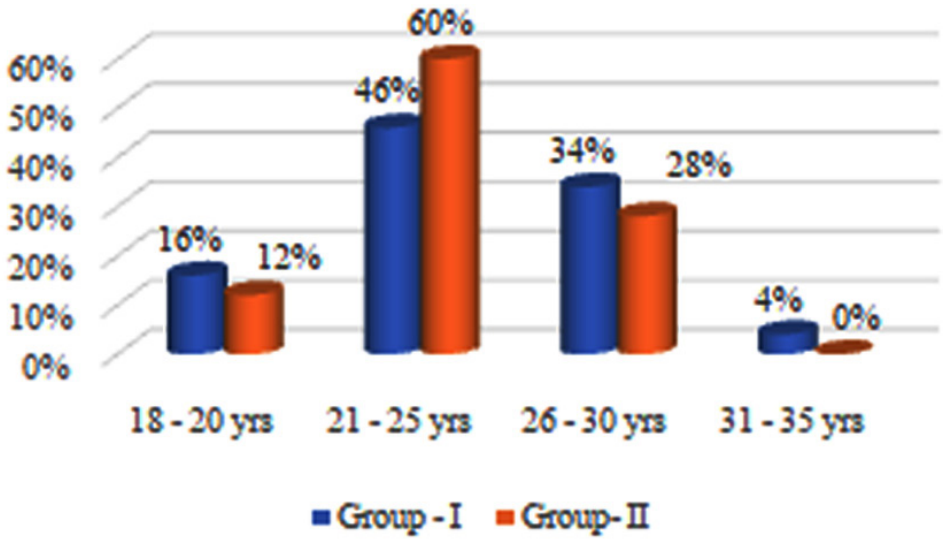
Demographic Variables		Group-I (n=50)		Group-II (n=50)		Chi- Square Value	"P" Value
		N	%	N	%		
Age	18-20 years	8	16%	6	12%	3.51	0.32 NS
	21-25 years			30			
	26-30 years	17	34%	14	28%		
	31-35 years	2	4%				
Educational Status	Illiterate	11	22%	6	12%	3.05	0.384 NS
	Primary Education	27	54%	28	56%		
	Secondary Education	6	12%	11	22%		
	Higher Secondary	6	12%	5			
Mothers Occupation	Housewife	41	82%	41		0.07	0.79 NS
	Working (or) Employed	9	18%	8	16%		

Monthly Income	Rs.1001-2000	6	12%	3	6%		
	Rs.2001-6000	33	66%	38	76%	1.552	0.46 NS
	Rs.6001-9000	11	22%	9	18%		
Religion	Hindu	50	100%	49	98%		
	Christian			1	2%		
Type of Family	Joint Family	28	56%	14	28%	8.05	0.005 S
	NuclearFamily	22	44%	36	72%		
Food Habits	Vegetarian	6	12%	8	16%	0.332	0.564 NS
	Non-vegetarian	44	88%	42	84%		

Group I – Preterm: NS – Non significant *Group II–Full term: S-Significant*

It was found from the above table that there was a significant difference in terms of type of family between both groups which was confirmed by the chi square test with the 'P'Value of 0.005

Chart 1: Shows the percentage distribution of Age of postnatal mothers in both groups. In the age group 21-25 year category mother in Group-II is 60% as compared to 46% of mothers in group I.



Section-II

Table 2: Assessment of personal factors among postnatal Mothers in Both Groups

N=100

S. No	Prenatal factors	Group-I (N=50)		Group-II (N=50)		Chi- square	'P'value
		Yes		Yes			
		N	%	N	%		
1	**Personal factor**						
	Below 45 kg during pregnancy	8	16%	1	2%	5.98	0.014 or 9.3 S
2	**Monthly Income of family**						
	a. Rs. 1001–Rs. 2000	8	16%	2	4%		
	b. Rs. 2001–Rs. 6000	32	64%	40	80%		
	c. Rs. 6001–Rs. 9000	10	20%	8	16%		
3	**Age at first pregnancy**						
	a. 18– 21 years	34	68%	16	32%		
	b. 22 – 25 years	12	24%	33	66%	2.38	0.3 NS
	c. 26– 29 years	4	8%	1	2%		

4	Height less than 145 cm	8	16%	4	8%	1.51	0.48 NS
5	Habit of smoking, alcohol, tobacco	0	0	0	0	-	-
6	Regular Antenatal Checkup	29	58%	44	88%		
6a	1st trimester						
	One time	15	30%	26	52%		
	Two times	17	34%	12	24%	6.65	0.155 NS
	Three times	8	16%	7	14%		
	No visits	3	6%	3	6%		
6b	2nd trimester						
	One time	6	12%	3	6%		
	Two times	22	44%	36	72%	8.79	0.06 NS
	Three times	14	28%	8	16%		
	No visits	1	2%	1	2%		
6c	3rd trimester						
	1-2 times	28	56%	22	44%		
	3-4 times	6	12%	23	46%	26.7	<0.001S
	5 times	0	0%	3	6%		
	No visits	9	18%	0	0%		
7	Adequate diet	44	88%	48	96%	-	
8	Extra diet	5	10%	20	40%		
	3-4 times	4	8%	12	24%		
	5-6 times	1	2%	6	12%		
9	Special Diet	3	6%	6	12%	1.09	0.295NS

Group I – Preterm NS — Non significant ***Group II –*** Full term S–significant

The above table 3 shows that there was a significant difference between certain variables, like maternal weight, antenatal visit, which was further confirmed by chi square test with the 'P' value of 0.014 and <0.001 respectively.

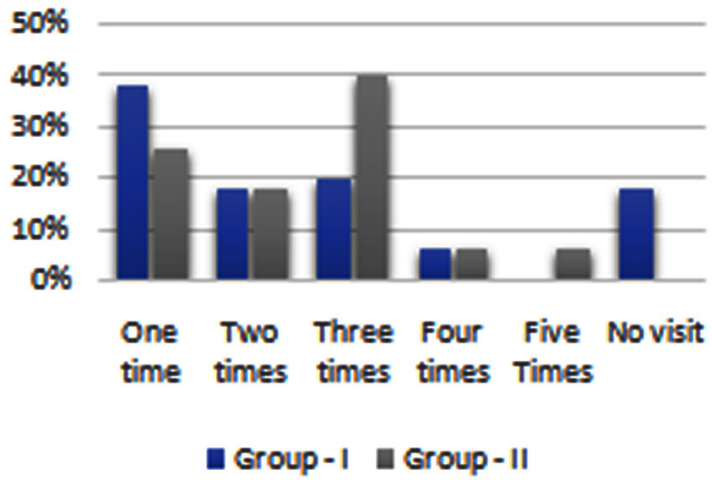


Chart 2: Shows the percentage distribution of Antenatal check up in both groups. In the third trimester of antenatal check-up 40% of mothers in group II gone for three times as compared to 20% of mothers in group I.

Table 3: Assessment of selected prenatal factors with relation to health problem and uterine Anomalie among Postnatal Mothers.

S. no	Prenatal factors	Group-I (N=50) Yes		Group-II (N=50) Yes		Chi- square	'P' value
		N	%	N	%		
1	Health problem	8	16	4	8	1.51	0.212 NS
	History of abortion						
2	History of UTI	4	8	1	2	-	-
3	PV examination during pregnancy	4	8	—	—	-	-
	2nd trimester						
	Two times	2	4	—	—		
	3rd trimester						
	Two times	2	4	—	—		
4	Consanguineous marriage	31	62	16	32	9.03	0.003 S
5	Uterine anomalie						
	Congenital anomalie of uterus	1	2	—	—	-	-
6	Cervical incompetency	5	10	—	—	-	-

The above table shows that there was a significant relationship in terms of consanguinity between two groups which was confirmed by the Chisquare test with the 'p' value of 0.003

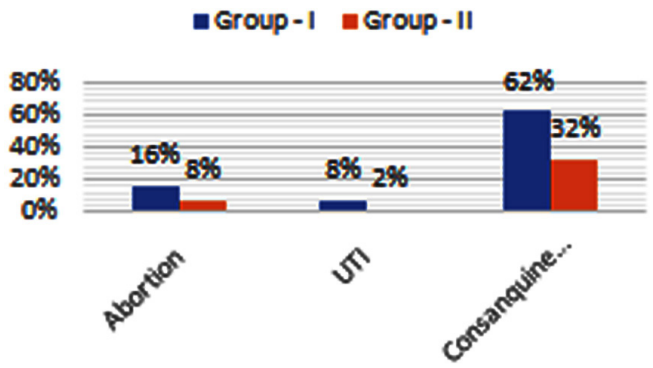


Chart 3: Shows the percentage distribution of assessment of selected health problem and uterine anomalies among postnatal mothers. Its was revealed that 62% of the mothers in group I had consanguineous marriage as compared to 32 % of mothers in group II

Table 4: Assessment of selected Prenatal Factors with relation to Over Distension of Uterus, APH and srgical factors among Postnatal Mothers ***N = 100***

S. no	Prenatal factors	Group-I (N=50) Yes		Group-II (N=50) Yes		Chi-Squre	P' Value
		N	%	N	%		
1	Over distension of uterus						
	Twin pregnancy	7	14%	—	—	7.53	0.006 NS
2	Polyhydramions	1	2%	2	4%	-	-
	Antepartum haemorrhage	5	10%	—	—	-	-
	Bleeding during pregnancy						
3	a. Mild	—	—	—	—	5.26	0.02 S
	b.Moderate	4	8%	—	—		
	c. Severe	1	2%	—	—		

4	Surgical factors Surgery during pregnancy	–	–	–	–	–	–
5	Appendicitis	–	–	–	–	–	–

Group I – *Preterm NS=Non significant* ***Group II –*** *Full term S=Significant*

Hence, it was found from the above table that there was a significant relationship, interms of antepartum hemorrhage, between the two groups which was confirmed by the Chisquaretest with the 'p' value of 0.02

Table 5: Assessment of selected prenatal factors with relation to Social and Psycological Factors among Postnatal Mothers

N=100

S. no	Prenatal factors	Group-I (N=50)		Group-II (N=50)		Chi-square	'P' value
		Yes		Yes			
		N	%	N	%		
1	Social factors	43	86%	49%	98%	-	-
	Household activities during pregnancy						
2	Job during pregnancy	13	26%	7	14%	2.25	0.134 NS
3	Travel during pregnancy						
	a. Bus	5	10%	6	12%	-	-
	b. Travel wheeler	1	2%	2	4%		
4	Rest during pregnancy	31	62%	49	98%	20.25	<0.001 S
5	Sexd uring pregnancy	4	8%	–	–	-	-
6	Psychological factor: Stress during pregnancy	11	22%	18	36%	-	-
7	Happy during pregnancy	44	88%	50	100%	-	-
8	Take care by family members	39	78%	49	98%	9.47	0.002 S
9	Fear about delivery process						
	a. About delivery	5	10%	11	22%	-	-
	b. About sex of baby	–	–	5	10%		
	c. About condition of the baby	4	8%	–	–		
10	Sleep during pregnancy	23	46%	36	72%		
	Day						
	1-2hour	13	26%	23	46%		
	3-hour	5	10%	4	8%		
	No sleep	7	14%	9	18%	-	-
	Night						
	5 – 6 hours	3	6%	7	14%		
	7 – 8 hours	8	16%	14	28%		
	9 – 10 hours	16	32%	15	30%		
	No sleep	1	2%	–	–		

Group I – *Preterm NS=Non significant* ***Group II*** *– Full term S=Significant*

The above table shows that there was a significant relationship between certain variables in two groups like, rest andcaring by family members, which was confirmed by Chi-square test with 'p' value of <0.001 and 0.002 respectively.

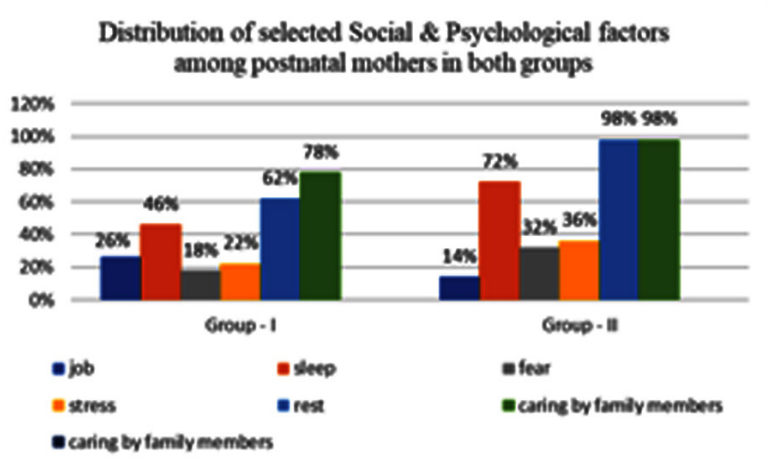


Chart 4: Shows the percentage distribution of selected social & psychological factors among postnatal mothers in both groups. About 78% of mothers in group I have been cared by their family members during antenatal period as compared to 98% of mothers in group II

CONCLUSION

This study intent to compared to assess the prenatal factors of the mothers who have delivered term and preterm babies at RMMCH, AU, Chidambaram, Tamil Nadu. Structured interview questionnaire was used among the mothers in the post natal ward, RMMCH.

The study revealed that the following factors were promoting term delivery such as monthly income more than Rs 2001-6000, age at first pregnancy were between 22-25 years, Regular antenatal check up, routine household activities, adequate diet, rest and happy during pregnancy, adequate sleep, caring by the family members.

It was also found that some factors were influencing preterm delivery such as joint family, history of abortion in one time, age at first pregnancy were between 18 - 21 years, inadequate antenatal checkup especially in third trimester, monthly income between Rs. 1001-2000, consanguinity, antepartum haemorrhage, twin pregnancy, oligohydramnios, job and inadequate sleep then rest during pregnancy and inadequate care by family members.

NURSING IMPLICATIONS

The implications of the findings have been discussed with special reference to Nursing education, Nursing practice, Nursing administration and Nursing research.

Implications for nursing education

- This study emphasizes the need for developing good teaching skills among the student nurses in the prevention of preterm delivery.
- The nurse educator should emphasize health education on antenatal care as a part of learning experience for the students.
- The nurse educator should arrange for the inservice education programme (seminars, workshops) for student nurses regarding the relationship between prenatal factor and perinatal outcome.
- The nurse educator can provide an opportunity for students to actively participate in implementation of education programmes.

Implications for nursing practice

Nurses play an important role in preventive, promotive and curative aspects of health care systems.

1. Nurses should be equipped with updated knowledge on prevention of preterm delivery.
2. Obstetrics and Gynecological nurses need to take up the responsibility to create awareness among the mothers regarding prevention of preterm delivery and healthy child.
3. Nursing practice in the community should focus on prevention of preterm delivery and provide education on prevention of preterm delivery.
4. They should be given planned teaching. Nurses should motivate the mothers and should know about prevention of preterm delivery.

Implications for nursing administration

The nursing administration in the hospital should have facilities for education to postnatal and antenatal mothers such as flash cards, chart, VCD and separate place to educate the mothers in the ward.

They should provide guide lines and modules regarding prevention of preterm delivery.

In-service education must be provided to all the nurses to update their knowledge in promoting full-term delivery (or) prevention of preterm delivery Modules on prevention of preterm delivery can be distributed to mothers in the postnatal wards.

Implications for nursing research

The study can be replicated on large samples.

A similar study can be conducted by a researcher using experimental design.

Evidence based nursing practice must take higher profile in order to increase awareness among the mothers

RECOMMENDATIONS

Based on the findings of the present study the following recommendations are made.

Family members should be educated to take care of the antenatal mothers like giving adequate diet, providing stress free environment, regular antenatal check-up, adequate rest and sleep

Family members should know about the risk factors for preterm delivery and prevention of the same.

Give health education regarding regular antenatal check-up.

A longitudinal study can be conducted in this study.

REFERENCES

1. Dutta. D.C. (2006). Text book of Obstetrics Including Perinatology and Contraception. Calcutta: New Central Book Agency.
2. Hockenberry., J. M., (2009). Wong's Essentials of Peadiatric Nursing, Mossori: Elsevier.
3. Jacob, A. (2005). A Comprehensive Text book of Midwifery. New Dehil: Jaypee brothers.
4. James, D. K., (2006). High Risk Pregnancy and Management Options. Newdelhi: Elsevier Publication.
5. Jane Norman, & Ian Greer., (2005). Preterm Labour Managing Risk in Clinical Practice. Philadelphia: Cambridge university Publication

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[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003; 61: 347–55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone-iodine antisepsis. State of the art. Dermatology 1997; 195 Suppl 2: 3–9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000; 71: 1792–801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. pp 7–27.

No author given

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

Reference from electronic media

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979–2001. www.statistics.gov.uk/downloads/theme_health/HSQ 20.pdf (accessed Jan 24, 2005): 7–18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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