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Effectiveness of Planned Health Education on Ideal Breastfeeding among Primigravidae in a Selected Hospital at Mangalore, South Karnataka

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I. INTRODUCTION

A newborn baby is a god's divine treasurable gift to a mother. This gift of life from a mother starts from single tiny cell which gets converted into a complex structure called fetus which grows within the womb and delivers from mother. It is a wonderful, painful but pleasant, marvelous, joyful and most awe inspiring experience to a mother. Giving birth to a baby is an experience for only mother which is unique[1]. After the birth still newborn baby needs to adjust in the outside world and has to undergo its normal growth and development. Newborn care is of immense for crucial development and healthy life of a newborn and breast feeding is one of them. The first year of life is crucial in laying the foundation of good health. To ensure the survival of healthy development of newborn child into a future adult certain specific biological and psychological needs must be met, at this time breast feeding is the ideal method suited for the psychological needs of the infant[2].

Breastfeeding is a unique experience, which should be valued and supported by both maternity and neonatal care givers. It is nature's most precious gift to the newborn. Mother's milk, beyond doubt is unparalleled in nutritional value and is the best start to life[3]. Breast feeding is an unequalled way of providing ideal food for the healthy growth and development of infants. It is also integral part of reproductive process with implications for the health of mother. Review of evidence has shown that on a population bases exclusive breast feeding for 6 months is the optimal way of feeding infants[4].

Nature has designed the provision that infants to be fed upon their mother's milk. They find their food and mother at the same time. Every child born in the country has a right to lead a healthy life which is directly related to breast feeding. Milk contains immunizing agents which protects babies against various diseases and is rich in vitamins, enzymes and antibodies and it provides babies for the establishment of personalities and learning readiness. It is no doubt that no other food can replace mother's milk[5]. Hence the advantage of breast feeding can't be overemphasized in the developing countries like India which have high neonatal and infant mortality rates. Therefore, it has to be fed on exclusive basis to boost the fulfillment of needs of the babies and it is the right of every child. Exclusive breastfeeding (EBF) reduces infant deaths caused by common childhood illness such as diarrhea and pneumonia, fastens recovery during illness and helps space births[6]. Studies have showed that breast fed babies are more intelligent, improves their academic performance and they become smarter than formula fed babies[7].

Globally, more than ten million children die before their 5th birthday due to preventable causes and malnutrition is associated with over half of all childhood death and over a million babies born in the country die within their first month of life. India has the unfortunate distinction of claiming more than a quarter of the total newborn deaths in the world. It is estimated that out of 3.9 million neonatal deaths that occur worldwide, almost 30 percent occur in India[8]. The major cause of infant death is lack of exclusive breastfeeding leading to malnutrition, diarrhea and infections. The infant mortality rate is increasing primarily due to infectious diseases and malnutrition. Failure to offer breast milk, on practicing of exclusive breast feeding, on-compliance with immunization on account of illiteracy, ignorance, cultural and social beliefs pose the greatest risk of death in the infant.

Many studies have found that mothers in India have inadequate knowledge and ill practices about breast feeding and EBF. Findings of a study conducted in Pondicherry, India revealed that the knowledge of the mothers was inadequate in areas of time of initiation of breastfeeding (92%), colostrum feeding (56%), duration of exclusive breastfeeding (38%), knowledge on expressed breast milk (51%) and continuation of breastfeeding while baby is sick[9]. An observational study conducted in suburban, coastal town of South India depicted that 58.7% knew that breastfeeding should be initiated within one hour of child birth but only 48% of the mothers who had delivered initiated breastfeeding within one hour and 71.6% of the mothers knew that exclusive breastfeeding should be practiced for six months[10]. Both the studies concluded that still there is lack in the knowledge of mothers regarding EBF and this condition may make mothers to feed artificial food which makes health personnel to stress on the importance of EBF and breast feeding.

It is reported that India lags behind in breastfeeding practices. Only eight million of the 26 million babies born in India every year are breastfed within an hour of birth, said a World Breastfeeding Trends Initiative report. Only eight million of the 26 million babies born in India every year are breastfed within an hour of birth, said a World Breastfeeding Trends Initiative report. It also ranked India at 31 out of the 51 countries surveyed. In breastfeeding practices from 2008-2012, the report found only 46 percent of newborns in India were breastfed in the first 24 hours of their birth. The percentage was found higher in neighboring countries such as Sri Lanka (75.8), Bangladesh (64), Afghanistan (54.3) and Bhutan (58.5)[11]. A study was carried out in randomly selected villages of the Bhojipura Uttar Pradesh revealed that most of the mothers had initiated breastfeeding (78.8%) within 24 hours of delivery. About 15.4% of the infants did not receive colostrum and 22.8% of the infants were not exclusively breastfed. Ghutti (water mixed with honey and herbs), boiled water, tea, and animal milk were commonly used pre-lacteal feeds. About 47.2% of the respondents were not aware of the benefits of exclusive breastfeeding. About one quarter of the mothers started complementary feeding before the child was six months old[12].

The above literatures depicts that there is still lack of knowledge regarding breastfeeding, expression, and storage of breast milk, correct attachment, etc. This indicates the need to promote awareness of the correct method of infant feeding and care of the newborn. Creating an awareness of the advantages of exclusive breastfeeding will further strengthen and support this common practice in rural communities and avoid an early introduction to complementary foods for sociocultural reasons. Equipping mothers with the information regarding ideal breastfeeding will aid in increasing the proper practice of breastfeeding which helps in reduction of neonatal morbidity and mortality and further help in gaining MDG 4. This study aimed to identify the effectiveness of planned health education regarding ideal breast feeding.

II. Methods And Materials

2.1 Methods

An evaluative approach with non-equivalent control group quasi-experimental design was adopted for this study. Total of 200 primigravidae of 37 to 40 weeks (100 in experimental group and 100 in control group) in Maternity hospital at Mangalore was purposefully selected as sample.

2.2 Materials

A structured interview schedule was developed as a tool for data collection. The structured questionnaire consisted of section A with demographic proforma of postnatal mothers and section B consisted knowledge items which were further categorized under five areas, namely, breast milk, basics of breast feeding, techniques of breast feeding, benefits of breastfeeding and expression and storage of breast milk. A lesson plan and visual aids for planned health education was developed which included knowledge on breast milk, basics of breast feeding, techniques of breast feeding, benefits of breastfeeding and expression and storage of breast milk.

2.3 Validity, Reliability of Tool and Pilot study

The content validity of the tool and contents of planned health education was established with the help of experts form related field. In order to establish the reliability of the tool, it was administered to 10 subjects and calculated using test retest method following Karl Pearson's formula. The calculated reliability (r) was 0.8 which indicated that the tool was highly reliable. Pilot study was conducted on 20 samples having the same sample characteristics. The data obtained were analyzed in terms of the objectives by using descriptive and inferential statistics. After conducting the pilot study, it was found that the study was feasible and researchable.

2.4 Data Collection

Main study was conducted in a Maternity hospital at Mangalore. Prior to the data collection, permission was obtained from the concerned hospital and authorities. Informed consent from the participants also was obtained. They were also assured for the confidentiality of the information. Data was collected from January 2009 to March 2009. Pretest of knowledge was conducted using the validated structured interview schedule. Planned health education on breastfeeding was administered in one session following the pre-test. A post-test of knowledge was conducted three days after the pre-test. The total time duration taken by respondents to complete the interview was forty five minutes.

Data was analyzed using descriptive and inferential statistics. Frequency and percentage were calculated for the demographic characteristics of postnatal mothers and percentage, mean, standard deviation, mean percentage were calculated for knowledge level. To see the effectiveness of planned health education, "z" test was calculated and chi-square test was calculated to see the association between the selected demographic variables and knowledge scores.

III. Results

3.1 Demographic characteristics of the primigravidae

In the both groups nearly one third of the respondents belonged to age group of 25-30 years and 38% of respondents in experimental and 37% of the respondents in control group had primary education. More than half (64% in experimental group and 59% in control group) belonged to Hindu religion. 66% of them in experimental group and 47% in control group belonged to nuclear family. About half of the respondents in both the groups had monthly income of Rs. 3,000 to 5,000 and slightly higher than half of the respondents had previously received information on breastfeeding.

3.2 Level of knowledge regarding ideal breastfeeding among primigravidae

In the pre-test, it was found that maximum of the respondents (92% in experimental group and 93% in control group) had an average knowledge. The total pre-test mean score was found to be 21.61± 2.69 in the experimental group and 21.42 ± 2.11 in the control group. After health education, in the post-test, the total mean knowledge score in experimental group was 32.01 ± 2.04 and in control group was 21.9 ± 1.95. Area wise analysis revealed that respondents of both the groups had highest knowledge in the area of nature of breast milk and lowest in the area of techniques of breast feeding in the pre-test. Similarly, in the post-test, the highest knowledge was seen in the area of nature of breast milk and lowest in the benefits of breast milk. Detail information is portrayed in table 1 and 2.

3.3 Effectiveness of planned health education on ideal breastfeeding

Analysis within the experimental and control groups revealed that in the experimental group, the calculated "z" value was 8.762 which showed $p < 0.001$ level of significant which indicated the significant difference in the level of knowledge before and after the implementation of planned health education program. In the control group, the calculated "z" value was 1.57 ($p > 0.05$) which revealed that there is no significant difference in pre-test and post-test knowledge.

Similarly, analysis between the pre-test knowledge of experimental and control group "z" was 0.184 ($p>0.05$) which indicated that there is no significant difference between pre-test knowledge of experimental and control groups. While comparing these differences between the post-test of experimental and control groups, the "z" value was found to be statistically significant ($z = 12.26$, $p < 0.001$). This finding also demonstrates that the planned health education is effective. The details of the findings are summarized in table 3.

3.4 Association between the level of knowledge and demographic variables

Analysis of the association between the pre-test level of knowledge regarding ideal breastfeeding among primigravidae and their selected variables exposed that there was no significant association between the level of knowledge and selected variables ($p > 0.05$). The detail result is presented in Table 4.

Table1. Description of the Pre-test and Post-test Knowledge Scores of Primigravidae of Experimental and Control Groups regarding Ideal Breastfeeding.

n = 100

	Experimental Group			Control Group		
	Mean	**SD**	**z value**	**Mean**	**SD**	**z value**
Pre-test	21.61	2.69	8.762	21.41	2.11	1.57
Post - test	32.01	2.04	(p< 0.001)	21.90	1.95	(p> 0.05)

Table 2. Description of Knowledge Scores of Both Groups according to Area wise Questions

n = 100

Areas	Experimental Group				Control Group			
	Pre-test		Post test		Pre- test		Post test	
	M	SD	M	SD	M	SD	M	SD
Nature of Breast milk	5.64	1.45	9.72	1.03	5.56	1.21	5.78	1.04
Basics of Breast milk	5.16	1.41	6.94	0.98	5.12	1.26	5.34	1.22
Technique of Breastfeeding	4.13	0.33	6.15	0.35	4.07	0.25	4.02	0.14
Benefits of Breastfeeding	2.44	0.49	4.0	0.00	2.51	0.50	2.43	0.49
Expression and storage of breast milk	4.24	0.42	5.0	0.00	4.16	0.82	4.29	0.64

Table 3. Description of difference between the Pre-tests and Post-tests of Both groups

n = 100

	Calculated "z" value	Significance
Pre-test	0.184	P > 0.05 (NS)
Post-test	12.26	P < 0.001 (S)

Table 4. Description of Association between the Pre-test Knowledge Scores and Selected Variables of Primigravidae.

n = 100

Selected Demographic Variables	Experimental Group χ^2 Value	Significant at 0.05 level	Control Group χ^2 Value	Significant at 0.05 level
Age	1.01	NS	1.46	NS
Religion	0.46	NS	0.69	NS
Education	3.477	NS	0.76	NS
Type of family	1.06	NS	2.35	NS
Occupation	5.72	NS	0.75	NS
Family Income	4.57	NS	5.83	NS

Key: NS = Not significant

IV. Discussion

The findings of the study reported that both the groups had an average knowledge regarding ideal breastfeeding in the pre-test. The total pre-test mean score was found to be 21.61 ± 2.69 in the experimental group and 21.42 ± 2.11 in the control group. This finding is consisted with a study conducted in Karnataka to assess the knowledge and confidence of primipara mothers regarding Exclusive Breast Feeding (EBF) which also revealed that most of the mothers (65.45%) had average knowledge[13].

After health education, in the post-test, the total mean knowledge score in experimental group was 32.01 ± 2.04 and in control group was 21.9 ± 1.95. This displayed that there is increase in the knowledge score in experimental group. It also paraded that there is significant difference in the level of knowledge before and after the implementation of planned health education program in the experimental group ($p<0.05$ level) whereas, in the control group, it was found that there is no significant difference in pre-test and post-test knowledge ($p>0.05$). While comparing these differences between the post-test of experimental and control groups, it was found to be statistically significant ($p<0.001$). These findings also exhibited that the planned health education is effective. This findings coincides with a study conducted in Coimbatore, India which revealed that there is increased in the mean knowledge score after intervention of video assisted education in experimental group in which mean pre-test knowledge score was 2.533±1.669 and post-test was 13.33±0.949 but in the control group there was no such increment in the post-test knowledge score. There was highly significant difference between post-test knowledge score[14].

Analysis of the association between the pre-test level of knowledge regarding ideal breastfeeding among primigravidae and their selected variables exposed that there was no significant association between the level of knowledge and selected demographic variable ($p > 0.05$). A study conducted in Coimbatore also reported that there was no association between the pre-test knowledge and selected variables of experimental and control group mothers ($p > 0.05$)[14].

V. Conclusion

The findings of the study illustrated that in pre-test maximum of primigravidae in both the groups had average knowledge which indicates that there was lack of adequate knowledge regarding ideal breastfeeding. In the post-test, after the intervention of planned health education, in the experimental group the knowledge score was increased dramatically. Whereas, in the control group, there was no such increment in the knowledge score. It also divulged that there is significant difference in the level of knowledge before and after the implementation of planned health education program in the experimental group. While comparing these differences between the post-test of experimental and control groups, it was found to be statistically significant.

Hence, it is concluded that the planned health education was effective to increase the knowledge regarding the ideal breastfeeding among primigravidae. Education regarding breastfeeding should be given to all pregnant mothers to improve their knowledge and practice of breastfeeding which may aid in reducing infant and child morbidity and mortality rates which further can help to achieve millennium development goal 4. Nursing students, peer groups can be mobilized to conduct these educational programs. All women and their

husbands should be educated on the topic and motivated to adopt healthy and exclusive breastfeeding practices. In addition to this, further researches should be conducted to cover other areas and different part of the country in terms of knowledge, attitudes and practice on ideal breastfeeding.

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