
Document heading: Research Article**Effectiveness of structured teaching program on diet during lactation among postnatal mothers****Rajitha S R****Assistant Professor, Christian College of Nursing, Neyyoor, Kanyakumari District, Tamilnadu, India***Received: 20-09-2018 / Revised: 25-10-2018 / Accepted: 20-11-2018**

Abstract

World Breastfeeding Week is celebrated annually from 1 - 7th August across 120 countries. It is promoted by global health organizations like WHO and UNICEF. The goal of this week is to spread awareness about the importance of exclusive breast feeding for the first six months of an infant's life. This helps to build the baby's immune system, provides critical nutrients and promotes development. It demands an additional 500 kcal in the diet of a breastfeeding mother. Quantitative research approach was designed to find out the effectiveness of structured teaching program on diet during lactation. Pre-experimental with one group pretest-posttest design was used. The study was conducted in CSI Mission Hospital, Neyyoor. The samples consisted of 50 postnatal mothers based on the inclusion criteria. They were selected by purposive sampling technique. Demographic variables, structured knowledge questionnaire and Likert five point attitude scale were used to assess the baseline data, level of knowledge and attitude on diet during lactation among postnatal mothers. The pre-test knowledge level was 60.24 ± 13.84 and the post-test knowledge level was 80.72 ± 13.9 . The mean difference was 20.48 and the 't' value was 7.383. The pre-test attitude level was 53.04 ± 7.9 and the post-test attitude level was 81.38 ± 5.29 . The mean difference was 28.34 and the 't' value was 21.077. The obtained 't' value was higher than the table value. Hence, it was highly significant at 0.05 level. The study concluded that, structured teaching program on diet during lactation was effective in terms of improving the knowledge and attitude of postnatal mothers.

Keywords: Effectiveness, Structured teaching program, Diet during lactation, Knowledge, Attitude, Postnatal Mothers.

Introduction

Breastfeeding is the closest bond a mother shares with her offspring. While breastfeeding, a mother needs to have the right diet so that the baby is fulfilled with all the right nutrients. [1] A proper postnatal diet is very important to ensure the well being of the mother as well as the new born. Giving birth is a stressful activity for the body and post birth, the hormones are again in play. Therefore, the postpartum recovery period is very fragile and delicate for the new mother. [2] During the first six months after delivery, the baby is fed only on breast milk and it depends on the mother for all nutrient requirements.

Eating a healthy diet during breast feeding is very important because the mother's diet determines the energy, protein, nutrient and vitamin content of her breast milk. [3] Many mothers are confused about what they should be eating in order to provide the safest, healthiest breast milk. A mother's diet can impact her breastfeeding baby, making a healthy diet with adequate calories and plenty of fluids critically important for lactating women. [4]

Need for the Study

Effective postnatal period is an important phase in the mother's life. Postnatal care is one of the most important maternal health care for not only prevention of impairment and disabilities, but also reduction of maternal mortality. [5] The highest annual neonatal rates are in South Asia, where an estimated 51 deaths

*Correspondence

Mrs. Rajitha S RAssistant Professor, Christian College of Nursing,
Neyyoor, Kanyakumari District, Tamilnadu, India.**E- Mail:** rajithajersha@gmail.com

occur for every 1,000 live births. Each year in South Asia alone, 2 million children die within a month of their birth. By comparison, the rates per 1,000 live births are 42 in Africa, 25 in Latin America and fewer than 10 in Europe and North America. [6] The WHO describes the postnatal period as the most critical and yet the most neglected phase in the lives of mothers and babies; most maternal and/or newborn deaths occur during the postnatal period. [7]

Postnatal care reaches even fewer women and newborns: less than half of women receive a postnatal care visit within 2 days of childbirth. [8] Every year, nearly four million new-born babies die in the first month of life. India carries the single largest share (around 25-30%) of neonatal deaths in the world. Neonatal deaths constitute two thirds of infant deaths in India; 45% of the deaths occur within the first two days of life. Over the years, the IMR has reduced worldwide, as well as in India, but neonatal mortality rate has not decreased proportionately. [9] The Neonatal Mortality Rate (NMR) in India is 29 per 1000 live births. The Millennium Development Goals (MDGs) 2015 have not been achieved which focused on decreasing NMR of India to MDGs has been extended; a significant work has been done in the area of improving neonatal mortality in India. [10]

The majority of maternal deaths and disabilities develop in the postpartum period because of inadequate postnatal care includes diet, hygiene, exercise, etc. On the account of above reasons, the researcher understood the appropriate care is very important for survival and healthy development of newborns. This was a motivation for the researcher to undertake this study.

Statement of the Problem

A study to assess the effectiveness of structured teaching program on diet during lactation in terms of knowledge and attitude among postnatal mothers in selected hospital at Kanyakumari District, Tamilnadu.

Objectives of the Study

- To assess the pre-test and post-test knowledge and attitude regarding diet during lactation among postnatal mothers
- To find out the effectiveness of structured teaching program on diet during lactation in terms of knowledge and attitude among postnatal mothers
- To find out the association between pre-test knowledge and attitude scores and selected demographic variables among postnatal mothers

Hypotheses

H₁ - There will be a significant improvement on knowledge and attitude after structured teaching program regarding diet during lactation among postnatal mothers.

H₂ - There will be a significant association between pre-test knowledge and attitude scores and selected demographic variables among postnatal mothers.

Research Approach and Design

In this study, quantitative research approach was designed to find out the effectiveness of structured teaching program on diet during lactation. Pre-experimental with one group pretest-posttest design was used. The schematic diagram is given below:

O₁ X O₂

O₁ - Pre-test assessment of Knowledge and attitude on diet during lactation

X - Exposure to an intervention (structured teaching program on diet during lactation)

O₂ - Post-test assessment of Knowledge and attitude on diet during lactation

Variables

Independent variable – Structured teaching program

Dependent variable – Knowledge and attitude

Settings of the Study

The study was conducted in CSI Mission Hospital, Neyyoor. This setting was selected because of the availability, feasibility and familiarity of the setting.

Population and Sample

The target population of the study was all the postnatal mothers who are admitted in selected setting. Postnatal mothers who fit into the inclusion criteria were selected as a sample.

Sample Size and Sampling Technique

The samples consisted of 50 postnatal mothers. They were selected by purposive sampling technique.

Criteria for Sample Selection

Inclusion Criteria

Postnatal mothers who were

- primi gravida
- in the age group of 21 – 35 years
- understand and speak Tamil
- available during the study period

Exclusion Criteria

Postnatal mothers who were

- in the medical field
- having severe depression and other postnatal complications
- not willing to participate in the study

Description of Research Tool

The data collection tool consists of three sections.

Section – I. Demographic Variables

It helps to collect the baseline socio demographic information about postnatal mothers. It consisted of age in years, education, religion, occupation, type of family, place of residence, type of delivery, dietary pattern, family monthly income and sources of health awareness.

Section – II. Structured Knowledge Questionnaire

It helps to assess the level of knowledge on diet during lactation among postnatal mothers. It consisted of 25 multiple choice questions with four options. Score '1' was allotted for every correct response and score '0' for every wrong response. The score was converted into percentage and interpreted as follows.

Adequate knowledge - 76 – 100%

Moderate knowledge- 51 – 75%

Inadequate knowledge- 0 – 50%

Section – III. Likert Five Point Attitude Scale

It helps to assess the level of attitude on diet during lactation among postnatal mothers. It consisted of 10 statements. It was scored as strongly agree – 5, agree – 4, uncertain – 3, disagree – 2 and strongly disagree – 1. The score was converted into percentage and interpreted as follows.

Most favorable attitude – 76 – 100%

Favorable attitude – 51 – 75%

Unfavorable attitude – 1 – 50%

Validity and Reliability**Description of demographic variables among postnatal mothers**

Table - 1: Frequency and Percentage Distribution of Postnatal Mothers on Selected Demographic Variables (n=50)

Demographic Variables	Frequency (f)	Percentage (%)
Age in Years		
21 - 25	24	48
26 - 30	24	48
31 - 35	2	4
Education		
Illiterate	0	0
School education	12	24

The demographic variables, structured knowledge questionnaire and Likert five point attitude scale was given to seven experts in the field of nursing, nutrition, biostatistics and obstetrics and gynecology for validating the tool. They were requested to give their valuable opinion on the appropriateness and relevance of the tool. There was 100% agreement for the tool as given by the experts. The reliability of the research tool was established by test-retest method. The 'γ' value was found to the structured knowledge questionnaire was 0.9 and the Likert five point attitude scale was 0.94, which indicated that the tool was highly reliable.

Pilot Study

A pilot study was conducted at selected hospital at Kanyakumari District among 5 subjects in a manner in which the final study would be done. Data were analyzed to find out the suitability of statistics. The pilot study revealed that, the study was feasible.

Data Collection Procedure

Formal permission and ethical clearance was obtained from the concerned authorities. The data collection procedure consisted of 3 steps.

Step – I: Pre-test

During this time, the researcher introduced herself individually to the selected samples and obtained their consent. Then, the study was explained and assurance given regarding confidentiality of the answers. Pre-test was conducted with the questionnaire.

Step – II: Intervention

On the same day, structured teaching program on diet during lactation administered to the samples with the help of booklet.

Step – III: Post-test

Post-test assessment was done on the fifth day of intervention with the same questionnaire.

College education	38	76
Religion		
Hindu	16	32
Christian	28	56
Muslim	6	12
Occupation		
Housewife	35	70
Private employee	15	30
Government employee	0	0
Type of Family		
Nuclear	27	54
Joint	23	46
Place of Residence		
Urban	21	42
Rural	29	58
Type of Delivery		
Normal	24	48
Caesarean section	26	52
Dietary Pattern		
Vegetarian	19	38
Non vegetarian	31	62
Family Monthly Income		
Below Rs. 5000	8	16
Rs. 5,001 - 10,000	5	10
Rs. 10,001 - 15,000	10	20
Above Rs. 15,000	27	54
Sources of Health Awareness		
Mass media	6	12
Health personnel	9	18
Magazines	35	70

Table 1 showed that, 48% of samples were belonged to the age group of 21 – 25 years and 26 – 30 years, 76% were completed their college education, 56% were Christians, 70% were housewives, 54% belongs to nuclear family, 58% residing in rural area, 52% were delivered by caesarean section, 62% are non-vegetarian, 54% got monthly income above Rs. 15,000 and 70% got awareness through magazines.

Assessment of knowledge and attitude on diet during pregnancy among postnatal mothers

Frequency and Percentage Distribution based on the Knowledge and Attitude of Diet during Lactation among Postnatal Mothers in Pre-test and Post-test (n=50)

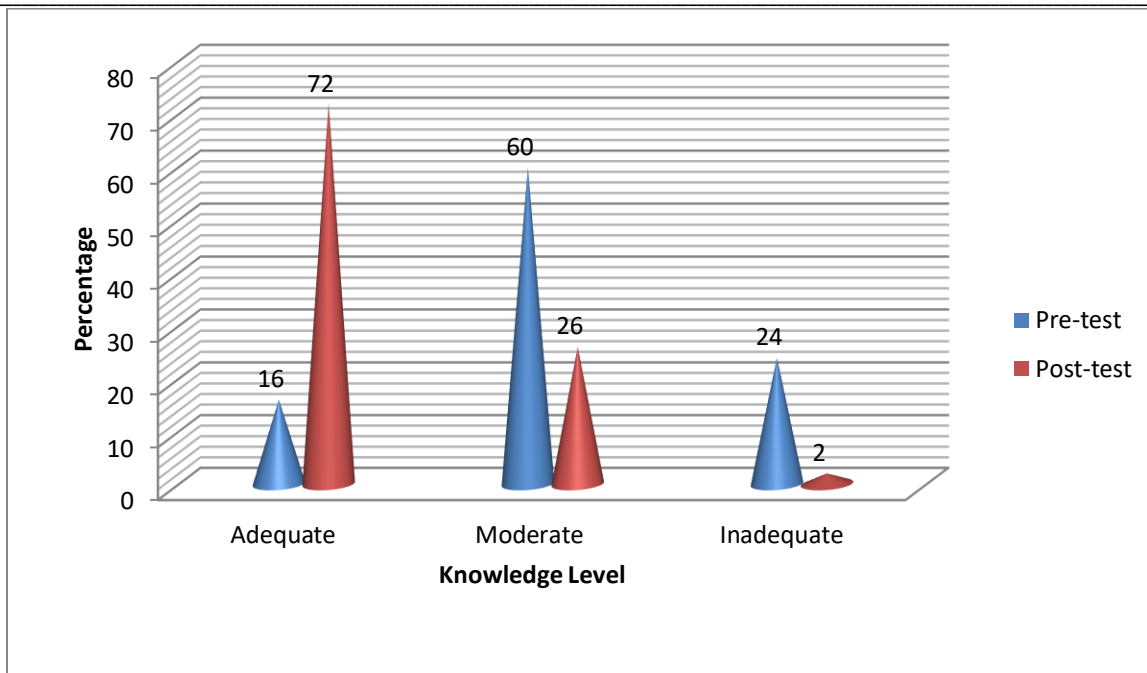


Figure – 1: Distribution of Samples according to the Pre-test and Post-test Knowledge on Diet during Lactation

Figure - 1 inferred that, 60% of samples had moderate knowledge, 24% had inadequate knowledge and 16% had adequate knowledge in pre-test. Among the samples, 72% had adequate knowledge, 26% had moderate knowledge and 2% had inadequate knowledge in post-test.

**Assessment of pre-test and post-test attitude regarding diet during lactation among postnatal mothers
Frequency and Percentage Distribution based on the Attitude of Diet during Lactation among Postnatal Mothers in Pre-test and Post-test (n=50)**

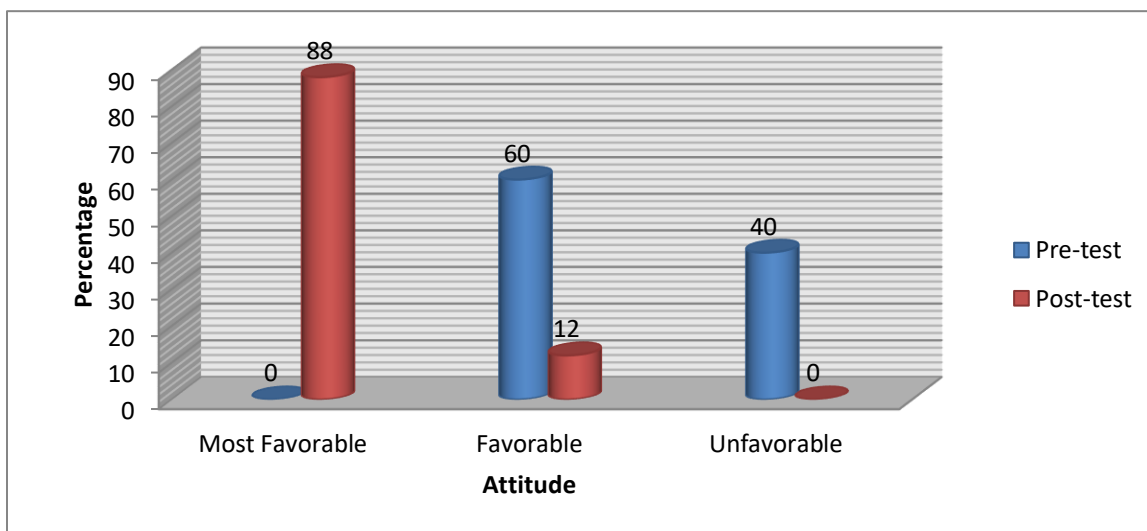


Figure – 2: Distribution of Samples according to the Pre-test and Post-test Attitude on Diet during Lactation

In Figure – 2, 60% of samples had favorable attitude and 40% had unfavorable attitude in pre-test. Among the 50 samples, 88% had most favorable attitude and 12% had favorable attitude in post-test.

Effectiveness of structured teaching programme on diet during lactation in terms of knowledge and attitude among postnatal mothers

Table – 2: Mean, Standard Deviation, Mean Difference, ‘t’ Value and P Value of Postnatal Mothers in Pre-test and Post-test (n=50)

Variables	Pre-test		Post-test		Mean Difference	t' Value	P Value
	Mean	SD	Mean	SD			
Knowledge	60.24	13.84	80.72	13.9	20.48	7.383	p<0.0001
Attitude	53.04	7.9	81.38	5.29	28.34	21.077	p<0.0001

Table – 2 revealed that, the pre-test knowledge level was 60.24 ± 13.84 and the post-test knowledge level was 80.72 ± 13.9 . The mean difference was 20.48 and the ‘t’ value was 7.383. The obtained ‘t’ value was higher than the table value. Hence, it was highly significant at 0.05 level. The pre-test attitude level was 53.04 ± 7.9 and the post-test attitude level was 81.38 ± 5.29 . The mean difference was 28.34 and the ‘t’ value was 21.077. The obtained ‘t’ value was higher than the table value. Hence, it was highly significant at 0.05 level.

Association between pre-test knowledge score and selected demographic variables among postnatal mothers

Table – 3: Association between Selected Demographic Variables and Pre-test Knowledge Score (n=50)

Demographic Variables	Below Mean	Above Mean	Chi-square	Level of Significance
Age in Years				
21 - 25	13	11	0.115	0.944
26 - 30	14	10		
31 - 35	1	1		
Education				
Illiterate	0	0	2.313	0.128
School education	9	3		
College education	19	19		
Religion				
Hindu	11	5	2.374	0.305
Christian	15	13		
Muslim	2	4		
Occupation				
Housewife	18	17	0.99	0.32
Private employee	10	5		
Government employee	0	0		
Type of Family				
Nuclear	14	13	0.41	0.522
Joint	14	9		
Place of Residence				

Urban	9	12	2.54	0.111
Rural	19	10		
Type of Delivery				
Normal	12	12	0.674	0.411
Caesarean section	16	10		
Dietary Pattern				
Vegetarian	10	9	0.141	0.707
Non vegetarian	18	13		
Family Monthly Income				
Below Rs. 5000	6	2		
Rs. 5,001 - 10,000	3	2		
Rs. 10,001 - 15,000	7	3	3.463	0.325
Above Rs. 15,000	12	15		
Sources of Health Awareness				
Mass media	2	4		
Health personnel	7	2	3.025	0.22
Magazines	19	16		

Table - 3 showed that, there was no significant relationship between pre-test knowledge score and age in years ($\chi^2=0.115$), education ($\chi^2=2.313$), religion ($\chi^2=2.374$), occupation ($\chi^2=0.99$), type of family ($\chi^2=0.41$), place of residence ($\chi^2=2.538$), type of delivery ($\chi^2=0.674$), dietary pattern ($\chi^2=0.141$), family monthly income ($\chi^2=3.463$) and source of health awareness ($\chi^2=3.025$) among postnatal mothers.

Association between pre-test attitude score and selected demographic variables among postnatal mothers

Table – 4: Association between Selected Demographic Variables and Pre-test Attitude Score (n=50)

Demographic Variables	Below Mean	Above Mean	Chi-square	Level of Significance
Age in Years				
21 - 25	15	7		
26 - 30	12	12	1.672	0.433
31 - 35	2	2		
Education				
Illiterate	0	0		
School education	9	3	1.873	0.171
College education	20	18		
Religion				
Hindu	7	9		
Christian	19	10	2.015	0.365
Muslim	3	2		
Occupation				
Housewife	16	19		
Private employee	13	2	7.229	0.007*
Government employee	0	0		

Type of Family				
Nuclear	12	15	4.428	0.035*
Joint	17	6		
Place of Residence				
Urban	14	1	10.45	0.001*
Rural	15	20		
Type of Delivery				
Normal	9	15	7.962	0.004*
Caesarean section	20	6		
Dietary Pattern				
Vegetarian	17	19	6.131	0.013*
Non vegetarian	12	2		
Family Monthly Income				
Below Rs. 5000	6	2		
Rs. 5,001 - 10,000	3	2		
Rs. 10,001 - 15,000	7	3	2.624	0.453
Above Rs. 15,000	13	14		
Sources of Health Awareness				
Mass media	3	3		
Health personnel	7	2	1.801	0.406
Magazines	19	16		

*Significant at 0.05 level

Table – 4 showed that, there was a significant relationship between pre-test attitude score and occupation ($\chi^2=7.229$), type of family ($\chi^2=4.428$), place of residence ($\chi^2=10.45$), type of delivery ($\chi^2=7.962$) and dietary pattern ($\chi^2=6.131$). There was no significant relationship between pre-test attitude score and age in years ($\chi^2=1.672$), education ($\chi^2=1.873$), religion ($\chi^2=2.015$), family monthly income ($\chi^2=2.624$) and sources of health awareness ($\chi^2=1.801$).

Discussion

The first objective of the study was to assess the pre-test and post-test knowledge and attitude regarding diet during lactation among postnatal mothers.

The corresponding hypotheses (H_1) - there will be a significant improvement on knowledge and attitude after structured teaching programme regarding diet during lactation among postnatal mothers.

- In pre-test, 60% of samples had moderate knowledge, 24% had inadequate knowledge and 16% had adequate knowledge. Among the samples, 72% had adequate knowledge, 26% had moderate knowledge and 2% had inadequate knowledge in post-test.
- Regarding the attitude, 60% of samples had favourable attitude and 40% had unfavourable attitude in pre-test. Among the 50 samples, 88% of

samples had most favourable attitude and 12% had favourable attitude in post-test.

The above finding would be compared with the study done by Jassie, (2000), on “Knowledge and attitude of lactating mothers regarding diet during lactation among 75 lactating mothers in selected maternity centers of Madurai”. Researcher used structured interview schedule and Likert attitude scale to assess the knowledge and attitude of lactating mothers. The study concluded that, 36 (48%) of lactating mothers had inadequate knowledge and 39 (62%) of lactating mothers had adequate knowledge, 38 (50.6%) of lactating mothers had unfavorable attitude and 37 (49.4%) of lactating mothers had favorable attitude towards lactating diet. [11]

The second objective of the study was to find out the effectiveness of structured teaching program on diet

during lactation in terms of knowledge and attitude among postnatal mothers

- The pre-test knowledge level was 60.24 ± 13.84 and the post-test knowledge level was 80.72 ± 13.9 . The mean difference was 20.48 and the 't' value was 7.383. The obtained 't' value was higher than the table value. Hence, it was highly significant at 0.05 level.
- The pre-test attitude level was 53.04 ± 7.9 and the post-test attitude level was 81.38 ± 5.29 . The mean difference was 28.34 and the 't' value was 21.077. The obtained 't' value was higher than the table value. Hence, it was highly significant at 0.05 level.

Hence, the hypothesis (H_1) - there was a significant improvement on knowledge and attitude after structured teaching program regarding diet during lactation among postnatal mothers was accepted.

The finding is supported by the study done by Malathy, Soli, Sheela and Rajakumari (2015) on "Structured education knowledge on postnatal diet among postnatal mothers". A pre - experimental one group pretest - posttest design was adopted for this study. The study was conducted in Sai Hospital, suryapet, Telugana, India. The investigator selected 30 postnatal mothers who were under the age group of 23 to 35 years and selected by using simple random sampling technique. The investigator assessed the level of knowledge of the women by using structured questionnaire and modified three point Likert Scale and by using checklist. The finding indicates clearly that, 86.67% of mothers had adequate knowledge. A well planned structured teaching program given to the same group. The effectiveness of program showed high level of significant at $p < 0.0001$ level. It showed that, structured teaching program was an effective method to improve the knowledge of postnatal mothers regarding postnatal diet. [12]

The third objective of the study was to find out the association between pre-test knowledge and attitude score and selected demographic variables among postnatal mothers

The corresponding hypothesis (H_2) was there will be a significant association between pre-test knowledge and attitude scores and selected demographic variables among postnatal mothers.

- There was no significant relationship between pre-test knowledge score and age in years, education, religion, occupation, type of family, place of residence, type of delivery, dietary

pattern, family monthly income and source of health awareness among postnatal mothers.

- There was a significant association between pre-test attitude score and occupation, type of family, place of residence, type of delivery and dietary pattern. There was no significant relationship between pre-test attitude score and age in years, education, religion, family monthly income and sources of health awareness.

Hence, the hypothesis (H_2) - there will be a significant association between pre-test knowledge and attitude scores and selected demographic variables among postnatal mothers was partially accepted.

The study finding would be compared with the study done by Usharani (2010) on "Effectiveness of structured teaching program regarding diet during lactation in terms of knowledge, attitude and practice among primi para mothers in Memorial Hospital at Dindigul". Fifty primi para mothers were selected for the study by purposive sampling technique. There was significant association found between post-test knowledge scores of primi parous mothers with education. There was significant association found between post-test attitude scores of primi parous mothers with occupation and food pattern at $p < 0.05$ level. It was concluded that, the structured teaching program regarding diet during lactation was effective in terms of improving knowledge, attitude and practice of primi para mothers. [13]

Implications of the Study

Nursing Research

Extensive research must be conducted to identify several more effective methods of education for postnatal mothers on this issue. This study brings about the fact that more studies need to be done in different settings with better teaching strategies.

Nursing Education

The nurses should be well equipped with up-to-date knowledge on diet during lactation. It provides an opportunity for nursing students to actively participate in educating postnatal mothers regarding diet during lactation by using appropriate audio visual aids.

Nursing Administration

Nursing administrators should ensure that education on diet during lactation reaches all postnatal mothers. They should emphasize and encourage the nurses to conduct periodic health education programs on diet during lactation in the postnatal wards and community areas.

Nursing Practice

The structured teaching program can be used by nurses in the postnatal wards and community areas.

Recommendations

A similar study can be replicated with control group. A same study can be made to assess the practice of postnatal mothers regarding diet during lactation. A comparative study can be undertaken to compare the knowledge, attitude and practice of postnatal mothers regarding diet during lactation rural versus urban area.

Conclusion

The study concluded that, structured teaching program on diet during lactation was effective in terms of improving the knowledge and attitude of postnatal mothers. Maternal education plays an important role in the improvement of their knowledge and attitude on diet during lactation.

References

1. Harnoor Channi-Tiwary. Essential Diet and Nutrition Tips for Breastfeeding Mothers. 2017. Available from: <https://food.ndtv.com/health/10-essential-diet-and-nutrition-tips-for-breastfeeding-mothers-144012010>
2. Postnatal Diet (Post Delivery Diet). India Parenting. 2018. Available from: http://www.indiaparenting.com/diet-and-weight-loss/450_4530/postnatal-diet-post-delivery-diet.html
3. Nutrition and Breast Feeding. 2018. Available from: <https://www.myvmc.com/pregnancy/nutrition-during-breastfeeding/>
4. Lauretta Claussen. Foods for Lactating Mothers. Healthy Eating. 2018. Available from: <https://healthyeating.sfgate.com/foods-lactating-mothers-6811.html>
5. Keithellakpam, M. et al., A study to assess the knowledge of postnatal mothers regarding self-care after childbirth in Bharati hospital and research centre, Pune. International Journal of Applied Research. 2017; 3(6): 1115-1117.
6. Reducing Neonatal Mortality and Morbidity. Improving Birth Outcomes: Meeting the Challenge in the Developing World. 2013.

Available from: <https://www.ncbi.nlm.nih.gov/books/NBK222108>

7. Postpartum Period. From Wikipedia, the free encyclopedia. 2018. Available from: https://en.wikipedia.org/wiki/Postpartum_period
8. Postnatal Care for Mothers and Newborns. World Health Organization. April, 2015. Available from: https://www.mcsprogram.org/wpcontent/uploads/2015/12/PNC_maternal_newborn.pdf
9. Anuradha, D. et al., A profile on the spectrum of neonatal mortality and morbidity pattern of extramural neonates in the Specialised Neonatal Care Unit (SNCU) in a tertiary care hospital. International Journal of Contemporary Pediatrics. March, 2018; 5(2): 427-431.
10. Seema B. et al., Severe acute maternal morbidity (SAMM) in postpartum period requiring tertiary Hospital care. Iran Journal of Reproductive Medicine. 2012; 10(2): 87 - 92.
11. Jassie, S. A descriptive study to assess the knowledge and attitude of lactating mothers regarding diet during lactation among lactating mothers in selected maternity centre of Madurai. 2000. The dissertation submitted to the Tamilnadu Dr. MGR Medical University, Chennai.
12. Malathy, D. Soli, T. Sheela, R. and Rajakumari, S. Structured education knowledge on postnatal diet among postnatal mothers. International Journal of Recent Scientific Research. 2015; 6(5): 3929 3932. Available from: <http://www.recentscientific.com/structured-education-knowledge-postnatal-diet-among-postnatal-mothers>
13. Usharani, Effectiveness of structured teaching program regarding diet during lactation among primi postnatal mothers in Kasturba Memorial Hospital at Dindigul. 2010. The dissertation submitted to the Tamilnadu Dr. MGR Medical University, Chennai. Available from: http://repository-tnmgrmu.ac.in/5559/1/3003065_usharani.pdf

Source of Support: Nil

Conflict of Interest: Nil