

# A Mixed Method Approach to Explore and to Assess the Effectiveness of Nutrition Education Regarding Dietary Taboos on Knowledge and Attitude Among Postnatal Mothers at Selected Rural Areas in Thanjavur District

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## Abstract

**Aim & objective:** To assess the effectiveness of nutrition education regarding dietary taboos on knowledge and attitude among postnatal mothers at selected rural areas in Thanjavur district. **Material and Method:** A mixed method approach carried in two phases. Initially started with quantitative using purposive sampling technique with 65 postnatal mothers to assess the effectiveness of nutrition education on knowledge and attitude regarding dietary taboos followed by which the qualitative phase using judgemental sampling among 5 postnatal mothers was explored about their dietary taboos. The assessment of demographic variables and knowledge, dietary pattern with food frequency and 24 hours dietary recall with self structured questionnaire and attitude regarding dietary taboos among Post-natal mothers with 4 point likert attitude scale. **Results:** Results of the study revealed that post-natal mothers' post-test mean knowledge score was 9.03 with S.D. 0.92, and their post-test mean attitude score was 34.92 with S.D 2.88. According to the calculated 't' values  $t = 37.762$  for knowledge and  $t = 43.019$  for attitude, there was a statistically significant difference in mean scores among postnatal mothers at  $p = 0.005$ . The qualitative study revealed that the postnatal mothers was identified to followed certain dietary restrictions few of which was considered to be dietary taboos on scientific ground like pineapple, jackfruit, papaya, red guava and drumstick leaves and others. **Conclusion:** The study enhanced postnatal mothers' knowledge and attitudes about dietary taboos. The participants were acquainted about the various factors that cause them to follow dietary taboos.

**Keywords:** Attitude, Dietary Taboos, Explore, Knowledge, Postnatal Mothers

## 1. Introduction

Postnatal period is the first six weeks after childbirth. For postnatal women, the postpartum period is characterized by physiological, psychological, and social transitions. The word taboo refers to something that is prohibited or restricted. It may differ from culture to culture. Due to cultural and religious restrictions, people are compelled to abstain from certain food and drink items.

Food taboos are common around all societies of the world, which are particularly perceptible during the lactation period. In popular belief, hot foods cause heat in the body and cold foods cause a cooling effect in the body. Postnatal women in India are exposed to so much advice and suggestions that they are left wondering what they should and should not actually eat.

In 2013, the World Health Organisation estimated that 99% (286,000) of maternal deaths occurred in developing countries. According to Ronsman et al about two thirds of maternal deaths occur after childbirth. It has been suggested that maternal mortality statistics should also include late death within the first year of life, as the risk of death increases by the age of six months. Indeed, this scenario of increased maternal mortality could be avoided if comprehensive and effective postnatal care was provided.

## 2. Statement of the problem

A mixed methods approach to explore and to assess the effectiveness of nutrition education regarding dietary taboos on knowledge and attitude among postnatal mothers at selected rural areas in Thanjavur district.

## 3. Objectives of the study

### 3.1 Quantitative

- To assess the dietary taboos adhered to by postnatal mothers based on food consumption patterns.
- To assess the effectiveness of nutrition education on postnatal mothers' knowledge and attitudes about dietary taboos.
- To correlate between different levels of knowledge and mean attitude scores towards dietary taboos in postnatal mothers.
- To associate selected demographic variables with different mean levels of knowledge and attitudes about dietary taboos of postnatal mothers.

### 3.2 Qualitative

- To elicit the dietary practices followed by the postnatal mothers.
- To explore the role of influencing variables regarding the food restrictions followed by the postnatal mothers.
- To determine whether the food restrictions as food taboos on scientific ground.

### 3.3 Null Hypotheses

**NH1:** There is no significant difference in the pre and post test level of knowledge and attitude regarding dietary taboos among the post natal mothers at  $p < 0.0001$  level

**NH2:** There is no significant correlation between knowledge and attitude score regarding dietary taboos among postnatal mothers at  $p < 0.0001$  level

**NH3:** There is no significant association between the selected demographic variables with mean differed level of knowledge and attitude regarding dietary taboos among postnatal mothers at  $p < 0.0001$  level.

## 4. Materials and Methods

A mixed method approach is implemented in two phases. Initially started with the purposeful quantitative use of non-probability sampling techniques with 65 postnatal mothers to assess the effect of nutrition education on knowledge and attitudes towards dietary taboos. In food, then a qualitative phase using judgmental sampling technique among 5 postnatal mothers was explored about their dietary taboos.

The study was conducted at Poondi, Saliyamangalam, Malaiyapuram, Kaattuvaai, Neikunam areas of Thanjavur district. The samples are Postnatal womens (Those who met the inclusion criteria).

The tool consisted of two parts i.e., data collection tool and intervention tool.

### 4.1 Part-I(i): Data collection tool (Quantitative)

This includes 4 sections:

#### 4.1.1 Section A :Assessment of Demographic variables

The demographic data of the postnatal mothers include their age, religion, educational status, and occupation, as well as their family income and the type of delivery.

It also includes the assessment of lifestyle pattern which is elicited using self- structured questionnaire

#### 4.1.2 Section B : Assessment on Dietary pattern

Assessment of Dietary pattern using Food frequency questionnaire and 24 hours Dietary recall.

#### 4.1.3 Section C - Assessment of Knowledge regarding Dietary taboos of Postnatal mothers

The knowledge questionnaire consists of 10 multiple-choice questions with 4 options, each question has one correct answer and postpartum mothers have to choose one answer to elicit their knowledge level towards the concept of Dietary taboos.

#### 4.1.4 Section-D: Assessment of Attitude regarding Dietary taboos of Postnatal mothers

A 4 point likert scale consisting of 10 statements (5 positive and 5 negative) was used to assess the attitude regarding Dietary taboos among Postnatal mothers.

### 4.2 Part- I(ii): Data collection tool (Qualitative)

**Section A:** Demographic information (semi structured questionnaire)

**Section B:** Interview Guide (semi structured questionnaire)

### 4.3 Part- II: Intervention Tool

The Nutrition education include the following

- A power point presentation regarding Dietary taboos for 20 minutes which includes
  - Postnatal period
  - Importance of diet on postnatal mothers health
  - Factors involved in food Restriction during Postnatal period
  - Commonly avoided foods
  - Dietary taboos on scientific ground

The post test assessment level of knowledge and attitude regarding dietary taboos was done using the same self structured knowledge questionnaire and 4 point likert scale to identify effectiveness of Nutrition education.

The same data collection procedure with the same data collection tool was carried out among the Postnatal

mothers. There was no attrition in the setting area. The obtained data were subjected to descriptive and inferential statistics analysis to determine the effectiveness of the intervention program.

### 4.4 Ethical consideration

An Ethical clearance from the Institutional Ethical Committee, formal permission from the head of the institution was obtained from Ganga Institute of Health Sciences to conduct research in the setting area and consent from participants.

After a brief information about self, the purpose of the study was explained to the Postnatal mothers. Privacy was provided and confidentiality regarding the data was assured to the Postnatal mothers so as to get their co-operation in the study.

### 4.5 Data analysis

Quantitatively collected data were analyzed by using the descriptive and inferential statistics. Frequency and percentage distribution were used to analyze the demographic variables, dietary pattern, pre-test and post test level of knowledge and attitude. Mean and standard deviation to analyze the level of knowledge and attitude. Paired t test is used to analyze the effectiveness of Nutrition education on the knowledge and attitude among the

**Table 1.** Scoring and interpretation of knowledge

Scores	Level of knowledge
≤50%	Inadequate knowledge
51-74%	Moderately adequate knowledge
75-100%	Adequate knowledge

**Table 2.** Scoring key

Statements	Strongly agree	Agree	Disagree	Strongly agree
Positive	4	3	2	1
Negative	1	2	3	4

**Table 3.** Scoring and Interpretations

Scores	Level of Attitude
≤50%	Unfavourable attitude
51-74%	Moderately favourable attitude
75-100%	Favourable attitude

Postnatal mothers. One way ANOVA/unpaired t test is used for the association of mean differed knowledge score and mean differed attitude score regarding dietary taboos among Postnatal mothers with selected demographic variables.

The qualitative study findings were analyzed by means of Giorgi's five stage analysis method.

## 5. Results

The results of the **demographic variables** assessment explicit that many of the Postnatal mothers are between the age group of 25-34 years of age, had completed their high school level and most predominantly they are belongs to Hindu religion. Most of the participants are Homemaker and their monthly income by over ≤6,174. Most of participants are multigravida mothers and no miscarriage is occur. Many of the participants are doing a moderate level of activity, followed non-vegetarian diet and didn't followed any food restriction.

The dietary pattern assessment through a **food frequency** questionnaire results that rice was the staple food for all the participants. Wheat was consumed weekly twice by the majority of the participants. Other cereal foods are consumed occasionally and rarely. Black gram dhal and toor dhal was the stable pulse for the majority of the participants. Most of the participants had curry leaves, coriander leaves daily. Regarding roots and tubers, onion and garlic consumed daily. On other vegetables tomato is consumed daily by the majority of the participants. The intake of fruits is very low among the participants, apple is consumed weekly once and they never intake Mango, jackfruit, papaya. Regarding meat and meat products egg and broiler chicken is consumed weekly once by the majority of the participants. Milk is consumed daily by the majority of the participants. The consumption of the dry fruits, nuts and oilseeds are very low among the Postnatal mothers. Most of the participants have used sunflower oil. Majority of the participants have consumed tea daily and coffee weekly once .

The dietary pattern assessment through **24 Hour dietary recall** results that the energy intake score of all the participants was 1750.0 Kcal. Protein intake was 34.69g. Fat was 17.42g. Iron was taken 8.44mg. The carbohydrate intake 81.39g. And the intake level of the participants is compared with the normal moderate lactating women RDA. When the RDA is compared with the 24 hours

recall of the participants the intake level of total calories are very low.

The pretest 100% of the Postnatal mothers has inadequate knowledge regarding dietary taboos whereas after the intervention of education program 6.15% gained moderately adequate knowledge and 93.85% had gained adequate knowledge in the post test which depicts that Nutrition education was effective in improving the knowledge.

The pretest 64% of the Postnatal mothers has unfavourable attitude and 1% has moderately favourable attitude. After the intervention onf the education program 5% gained moderately favourable attitude and 60% has gained favourable attitude. Thus, the post test depicts that the Nutrition education was effective in enhancing the attitude.

The table shows that there was significant difference between pre test and post test of knowledge whereas the calculated 't' value  $t = 37.762$  showed that there was a statistical significant at  $p < 0.0001$  level which indicates that nutrition education was highly effective in enhancing the knowledge of Postnatal mothers towards the dietary taboos. There was significant difference between pre test and post test of attitude whereas the calculated 't' value  $t = 43.019$  showed that there was a statistical significant at  $p < 0.0001$  level which indicates that nutrition education was highly effective in enhancing the attitude of Postnatal mothers.

The table shows that the calculated 'r' value is 0.430 which revealed that there was a moderately positive correlation between knowledge and attitude at  $p < 0.0001$  level. Hence improving knowledge will enhance the positive attitude towards the Postnatal mothers.

The association of mean differed knowledge scores regarding dietary taboos among Postnatal mothers with selected demographic variables and infers that there is more mean gain score ( $F=4.178$ ) in knowledge with educational qualification of the Postnatal mothers.

The association of mean differed attitude scores regarding dietary taboos among Postnatal mothers with selected demographic variables and infers that there is more mean gain score ( $F=2.107$ ) in attitude with age of the Postnatal mothers.

### 5.1 For qualitative research approach

The exploration of information on the dietary taboos among Postnatal mothers by using Phenomenological approach, themes was derived as information on dietary practices of Postnatal mothers, influences of food beliefs,

Variable	Test	Mean	S.D	Mean Difference	Paired 't' Test & p-value
Knowledge	Pretest	2.38	1.23	6.65	t = 37.762 p=0.0001, S***
	Post Test	9.03	0.92		
Attitude	Pretest	16.11	2.09	18.81	t = 43.019 p=0.0001, S***
	Post Test	34.92	2.88		

\*\*\*p<0.001, S – Significant

restricting dietary taboos and dietary taboos on scientific ground and clustered themes by narration, themes were coded into many sub-themes of mode of delivery, pathiya sapadu, food preferences under the information on dietary practices. Familial, Socio cultural, Religious and psychological factors under the information on influences of food beliefs among Postnatal mothers.

## 6. Discussion

### 6.1 Quantitative

This clearly shows that Postnatal mothers who receive nutrition education have a significant improvement in the level of knowledge and attitude with more mean score.

The correlation between mean differed knowledge and attitude score which shows that there was a moderately positive correlation between knowledge and attitude score among Postnatal mothers. Thus, the nutrition education represents the improvement in the knowledge and attitude among Postnatal mothers.

The association of the selected demographic variables with mean differed knowledge and attitude score about dietary taboos among Postnatal mothers and infers that there was more gain score in knowledge with educational qualification of Postnatal mothers and attitude with the age of Postnatal mothers.

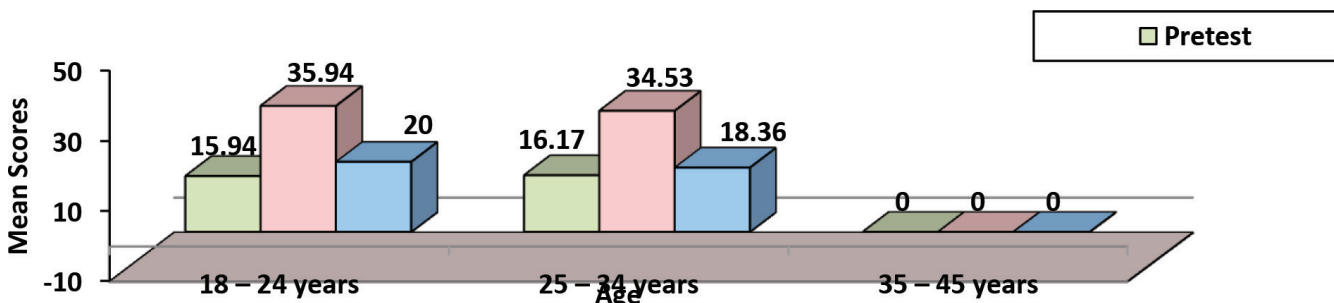
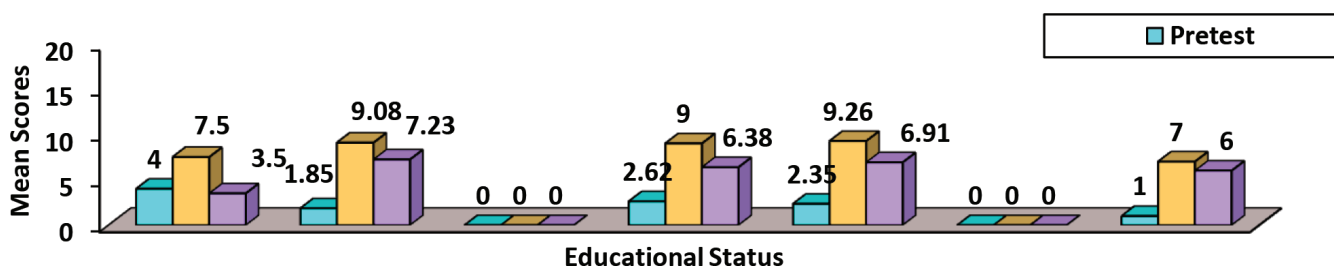
### 6.2 Qualitative

Test	Mean	S.D	Karl Pearson's Correlation 'r' value
Knowledge	6.65	1.42	r = 0.430 p=0.0001, S***
Attitude	18.82	3.53	

\*\*\*p<0.001, S – Significant

### 6.3 Limitations

1. The researcher had difficulties in gathering the samples, identifying the residence of the study participants and the duration of study period.
2. The researcher found difficulties in reviewing the Tamil Nadu related literature.





Food restrictions followed by postnatal mothers	Food restrictions Belief	Considered to be taboos or not on scientific ground
Pine apple	Infantile convulsions, Delay healing	Pineapple juice for uterine fundal height reduction in postpartum mothers <sup>17</sup>
Jackfruit	Infantile convulsions	Jack Fruit is scientifically found increase the levels of breast milk flow in postpartum mothers <sup>22</sup>
Mango	Infantile convulsions and profuse vaginal bleeding	It is recommended by USDA during Breastfeeding <sup>23</sup>
Papaya	Hot Food	A Papaya decoction (Papaya Carica L.) increase breast milk production in breastfeeding mothers <sup>16</sup>
Red guava	Believed to cause a cold in child	Improve the haemoglobin levels in Postpartum anemia <sup>18</sup>
Banana	Believed to cause a cold	It increase the breast milk production because it contain Lactogogum <sup>24</sup>
Citric fruits	Believed to cause a cold	It is recommended by USDA during Breastfeeding <sup>23</sup>
Coconut	Believed to cause vomiting for a child	Scare and superficial scientific literature support
Drumstick leaves [Moringa oleifera]	Believed to cause a common cold	Moringa leaves could be helpful to manage anaemia in postnatal mothers <sup>19</sup>
Brinjal	Cause a predisposes to infection , generalized itching	Scare and superficial scientific literature support
Cauliflower, cabbage, potato	Believed to cause a flatulence	Can be avoided for first 3 weeks as they de-harmonize the five body elements and disturb <sup>28</sup>
Peanut	Believed to cause a vomiting, nausea	It didn't cause any allergy <sup>25</sup>
Mutton	Believed to avoid because of suture wound,	Help recovery, Expulsion of Lochia <sup>26</sup>
Small fish	Believed that the bone in small fish will go to baby through breast milk, cause slow recovery	It will Stimulate lactation but can limit consumption because it contain mercury <sup>32</sup>
Water	It can cause cold to the baby and profuse the uterine bleeding to the mother	Increase total water intake[TWI] 800ml/day <sup>27</sup>

3. The researcher had difficulties finding the study related to dietary taboos under the scientific ground.

## 7. Conclusion

The study was conducted to determine the effectiveness of Nutrition education on knowledge and attitude among Postnatal mothers. The findings of the study shows that the post test mean knowledge score of Postnatal mothers 9.03 with S.D 0.92 and their post test mean attitude score were 34.92 with S.D 2.88. The calculated  $t'$  value  $t = 37.762$  for knowledge and  $t = 43.019$  for attitude indicates there was a statistically significant at  $p=0.005$  level with more mean score among postnatal mothers regarding food restrictions. In the qualitative study revealed that the postnatal mothers was identified to follow certain dietary restrictions few of which was considered to be dietary taboos on scientific ground like pineapple, jackfruit, papaya, red guava and drumstick leaves and others scare

and superficial scientific literature support. Providing dietary education can help them to gain knowledge regarding imposed food restrictions upon them thereby they can follow appropriate nutrition that helps the postnatal mothers and the infants for better health.

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## 9. Contributors

**KK:** Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalized the manuscript and will act as the guarantor of the paper; **EJ:** Conceptualization of the study, Data collection, analysis of the data, writing the manuscript, finalized the manuscript, edited and critically evaluated the manuscript; **PP, NG:** Conceptualization of the study, Data collection, analysis of the data, writing the manuscript, finalized the manuscript, edited and critically evaluated the manuscript.

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