

# A Comparative Study to Assess the Growth and Development of Babies on Breastfeeding vs. Formula Feeding among the Primipara Mother in Selected Community Moradabad (U.P)

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## 1. Pilot Study

The pilot study was conducted in one of the selected community area in Moradabad (U.P). 20 samples were taken for the pilot study (10 breast feeding and 10 formula feeding mothers).

The average time taken for completion of the interview was 45 minutes for each mother. The duration of the pilot study was 4 week (1 week for data collection and 3 weeks for observation of the babes). There was no difficulty in collecting the data during pilot study.

## 2. Research Question

*“Comparative study to assess the growth and development of babies on breastfeeding Vs. formula feeding among the primipara mother.”*

## 3. Objectives of the Study

- 1) To assess the knowledge and practice of breastfeeding among primipara mother's.
- 2) To assess the knowledge and practice of formula feeding among primipara mother's.
- 3) To compare the babies growth and development of breast feeding Vs. formula feeding among primipara mother's.

## 4. Hypotheses

**H<sub>1</sub>:** There will be significant difference between practice score of breastfeeding and formula feeding primipara mothers.

**H<sub>2</sub>:** There will be no significant difference between knowledge score of breastfeeding and formula feeding primipara mothers.

## 5. Variables in the Study

**Dependent variable:** Growth and development on the babies.

**Independent variable:** Level of knowledge and practice of primipara mothers regarding breast feeding and formula feeding.

### Assumption

The breast feeding babies will have better growth and development then the formula feed babies.

### Research Approach

Research approach is a systematic, controlled, empirical, and critical investigation of natural phenomena guided by theory and hypotheses about the presumed relations among such phenomena.(Dane 2003)

A Quantitative approach was used in this study as the study was aimed to assess the level of Knowledge and Practice on growth and development of babies on breastfeeding Vs. formula feeding among the primipara mother.

### Research Design

Research design is the master plan specifying the methods and procedures for collecting and analyzing the needed information in a research study.

Comparative study design was used to assess the level of Knowledge and Practice on growth and development of babies on breastfeeding Vs. formula feeding among the primipara mother.

### Setting for Pilot Study

Setting is the physical location in which data collection takes place can be natural, partially controlled, or highly controlled. The present study was conducted in selected community areas Moradabad, Uttar Pradesh. The common health problems such as inadequate feeding, fever, cough and cold, diarrhea, growth delay, unhygienic and malnutrition etc, was noticed among the infants in the community area. It has all basic facilities like school, sub center, electric and water facility, underground drainage system.

### Target Population for Pilot Study

The population of the study comprises of all breastfeeding and formula feeding primipara mother

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within the age group of 20-35 years having an infant in a selected community.

#### **Sample Size for Pilot Study**

Sample size refers to the number of subjects, events, behaviors, or situation that are examined in the study. The sample of the present pilot study consisted of 20 mothers who fulfilled the criteria (10 breastfeeding and 10 formula feeding mothers). All primipara mother's during 10 weeks of data collection.

#### **Sampling Technique for Pilot Study**

Samples who fulfilled the eligibility criteria were selected using Purposive Sampling Technique.

#### **Sampling Criteria for Pilot Study**

##### **a) Inclusion criteria:**

- Mothers who are lactating up to 6 months.
- Mothers who are willing to participate in the study.
- Mothers who are available during the time of data collection.
- Mothers who were in the age group of 20 to 35 years.

##### **b) Exclusion criteria**

- The mothers who are having serious illness during data collection.
- The mothers who are having HIV/AIDS.
- Mothers those are having twin babies.

#### **Description of the Research Tool**

The tool used in this study was a Structured Interview Schedule and the tool was organized in to 3 parts.

#### **PART: I Demographic characteristics**

The tool was used to gather personal information of mothers such as Age, Qualification status, Community, Type of Family, Occupation.

#### **PART: II knowledge and Practice questions on Breast feeding**

The purpose of the questions is to gather data on knowledge and practice on breast feeding mothers. There are 25 questions on knowledge and 14 questions on practice about breast feeding.

#### **PART: III knowledge and Practice questions on Formula feeding**

The purpose of the questions is to gather data on knowledge and practice on formula feeding mothers. There are 25 questions on knowledge and practice about formula feeding.

### **6. Scoring and Interpretation**

The knowledge questions consisted of 25 questions to assess the overall knowledge on breastfeeding and 25 questions to assess the overall knowledge on formula feeding primipara mother. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 25.

The practice questions consisted of 14 questions to assess the overall practice on breastfeeding and 14 questions to assess the overall practice on formula feeding primipara mother. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 14.

#### **Development of the Tool**

The tools were prepared on the basis of the objectives of the study, after an intense search of related literature, and the guidance of the experts in the field of Child Health Nursing. Simplicity of languages, organization and clarity of statement were the factors kept in mind while preparing the tool. The demographic data and questionnaire regarding (Knowledge and Practice questions on breastfeeding and formula feeding) were revised several times by consultation with experts until it reached the final stage. The tool was then drafted in English and translated into Hindi.

#### **Plan for Data Analysis for Pilot Study**

- The investigator will use descriptive and inferential statistics to analyze the data.
- The analyzed data will be presented in the form of tables, diagrams and graphs.
- The descriptive statistics used will be frequency and percentage distribution, mean and standard deviation.

Descriptive Statistics Frequency and percentage distribution were used to analyze the demographic variables and to assess the level of Knowledge and Practice on growth and development of babies on breastfeeding Vs. formula feeding among the primipara mother. Mean and mean score percentage was used to determine the difference in the level of Knowledge and Practice on growth and development of babies on breastfeeding Vs. formula feeding among the primipara mother.

Questionnaire regarding (Knowledge and Practice questions on babies breastfeeding and formula feeding) were revised several times by consultation with experts until it reached the final stage. The tool was then drafted in English and translated into Hindi.

### **7. Analysis and Interpretation**

Data analysis defined as "the systematic organization and synthesis of research data, and the testing of research hypothesis using those data and its interpretation as a process of making sense of the result of a study and examining their implications". (James A. Fain 2003)

The pilot study deals with the analysis and interpretation of the data collected from 10 Breast feeding mothers and 10 Formula feeding mothers about knowledge & practice on infant feeding in selected community areas at Moradabad (U.P).

#### **The data have been analyzed and presented under the following headings**

- 1) Demographic characteristics of the samples.

- 2) Assessment of the level of knowledge and practice of Breast feeding and formula feeding mothers.
- 3) Finding related compare the mean and standard deviation of growth and development regarding breast feeding Vs. formula feeding.

**1. Demographic characteristics of the samples**

The demographic data of the samples are presented in relation to demographics characteristics of mother such as Age, Qualification status, Community, Type of Family, Occupation.

**Table 1:** Frequency and Percentage Distribution of Breast Feeding and Formula Feeding Mothers Related to Demographic Characteristics

Section-1 Socio Demographic Proforma	Breastfeeding F (%)	Formula Feeding F(%)	Breastfeeding F(f)	Formula Feeding F(f)	
Age (in years)	20-25	10	70	1	7
	26-30	70	30	7	3
	31-35	20	0	2	0
Qualification	High School	20	30	2	3
	Senior Secondary	20	20	2	2
	Graduate	30	30	3	3
	Post Graduate	30	20	3	2
Community	Rural	10	20	1	2
	Urban	90	80	9	8
Type of Family	Nuclear Family	60	50	6	5
	Joint Family	40	50	4	5
Occupation.	Housewife	80	80	8	8
	Private Servant	20	20	2	2
	Government Servant	0	0	0	0
	Daily Wages	0	0	0	0

**a) Age in years**

Most of the mothers in both groups were in the age group between 26-30 years, 10% of the Breast feeding mothers and 70% of formula feeding mothers. 10% of Breast feeding mothers and 70% of formula feeding mothers were in the age group between 20-25. Only 20% Breast feeding mothers were in the age group between 31-35.

**b) Qualification status**

Nearly 20% of the Breast feeding mothers and 30% of formula feeding mothers had High school education. 20% of Breast feeding mothers and 20% of formula feeding mothers had higher secondary education. Whereas only 30% of Breast feeding mothers and 30% of formula feeding mothers had Graduate. 30% of Breast feeding mothers and 20% of formula feeding mothers had Post Graduate.

**c) Community**

Nearly 10% of the Breast feeding mothers and 20% of formula feeding mothers were from Rural Community and 90% of Breast feeding mothers and 80% of formula feeding mothers were from Urban Community.

**d) Type of family**

60% of Breast feeding mothers and 50% of formula feeding mothers were from Nuclear family and 40% of Breast feeding mothers and 50% of formula feeding mothers were from Joint family.

**e) Occupation**

Nearly 80% of the Breast feeding mothers and 80% of formula feeding mothers were Housewife. 20% of Breast feeding mothers and 20% of formula feeding mothers were Private servant. Whereas 0% of Breast feeding mothers and 0% of formula feeding mothers were Government servant.

**2. Assessment of the level of knowledge and practice of breastfeeding and formula feeding mothers.**

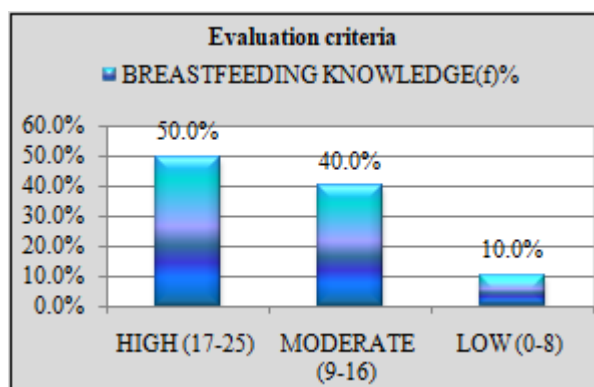
**Breastfeeding Knowledge**

The knowledge questions consisted of 25 questions to assess the overall knowledge on breastfeeding. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 25. The scores were interpreted as follows.

**Table 2:** Criteria Measure of Breastfeeding Mothers Knowledge Score

Criteria Measure of Knowledge Score N=10	
Category Score	Breastfeeding Knowledge(f)%
HIGH (17-25)	5(50%)
MODERATE (9-16)	4(40%)
LOW (0-8)	1(10%)

This table shows 50% of breastfeed mothers had high knowledge on breast feeding, 40% of breastfeed mothers had moderate knowledge and 1% of breastfeed mothers had low knowledge on breast feeding.



**Figure 1:** Diagram Showing Level of Knowledge of breastfeeding mothers

The bar diagram showing level of knowledge of breastfeeding mothers 50% of breastfeed mothers had high knowledge on breast feeding, 40% of breastfeed

mothers had moderate knowledge and 1% of breastfeed

mothers had low knowledge on breast feeding.

**Table 3:** Showing the Descriptive Statistics of knowledge score of breastfeeding mothers, N=10

Descriptive Statistics		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
Knowledge Score	Breastfeeding	15.70	4.322	16.5	14	21	7	62.80

Maximum=25 Minimum=0

Table shows the breastfeeding mothers mean knowledge score 15.70 and 62.80%. The S.D was 4.322 and median was 16.5 and range was 14 in the breastfeeding mothers.

average practice and 0% of breastfeed mothers had poor practice on breast feeding.

**Breastfeeding Practice**

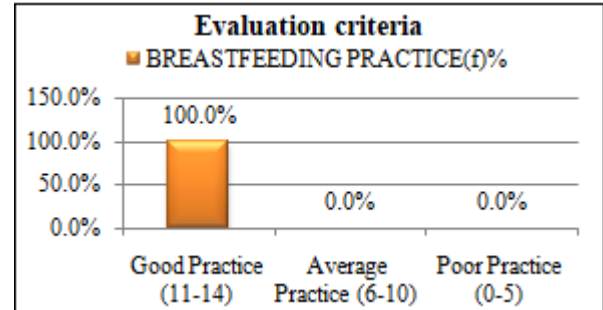
The practice questions consisted of 14 questions to assess the overall practice on breastfeeding. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 14. The scores were interpreted as follows.

**Table 4:** Criteria Measure of Breastfeeding Mothers Practice Score

Criteria Measure of Practice Score N=10	
Category Score	Breastfeeding Practice(f)%
Good Practice (11-14)	10(100%)
Average Practice (6-10)	0(0%)
Poor Practice (0-5)	0(0%)

Maximum = 14 Minimum = 0

This table shows 100% of breastfeed mothers had good practice on breast feeding. 0% of breastfeed mothers had



**Figure 1:** Diagram Showing Level of Practice of breastfeeding mothers

The bar diagram showing practice score of breastfeeding mothers. 100% of breastfeed mothers had good practice on breast feeding. 0% of breastfeed mothers had average practice and 0% of breastfeed mothers had poor practice on breast feeding

**Table 5:** Showing the Descriptive Statistics of practice score of breastfeeding mothers, N=10

Descriptive Statistics		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
Practice Score	Breastfeeding	13.7	0.483	14	1	14	13	97.86

Maximum=14 Minimum=0

This table shows the breastfeeding mothers the mean practice score was 13.70 and 97.86%. The S.D was 0.483 and median was 14 and range was 1 in the breastfeeding mothers.

**Formula Feeding Knowledge**

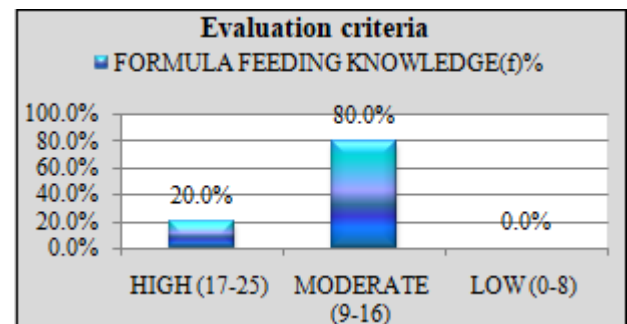
The knowledge questions consisted of 25 questions to assess the overall knowledge on formula feeding. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 25. The scores were interpreted as follows

**Table 6:** Criteria Measure of Formula Feeding Mothers Knowledge Score

Criteria Measure of Knowledge Score N=10	
Category Score	Formula Feeding Knowledge(f)%
High (17-25)	2(20%)
Moderate (9-16)	8(80%)
Low (0-8)	0(0%)

Maximum = 25 Minimum = 0

This table shows 20% of formula feed mothers had high knowledge on formula feeding. 80% of formula feeding mothers had moderate knowledge and 0% of formula feeding mothers had low knowledge on breast feeding.



**Figure 2:** Diagram Showing Level of Knowledge of formula feed mothers

The bar diagram showing level of knowledge of breastfeeding mothers 20% of breastfeed mothers had high knowledge on formula feeding. 80% of formula feed mothers had high knowledge on formula feeding. 0% of formula feeding mothers had moderate knowledge and 0% of formula feeding mothers had low knowledge on breast feeding.

**Table 7:** Showing the Descriptive Statistics of knowledge score of formula feeding mothers, N=10

Descriptive Statistics		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
Knowledge Score	Formula feeding	14.80	3.425	15.5	11	20	9	59.20

Maximum=25 Minimum=0



This table shows the formula feeding mothers the mean knowledge score was 14.80 and 59.20%. The S.D was 3.425 and median was 15.5 and range was 11 in the formula feeding mothers.

**Formula Feeding Practice**

The practice questions consisted of 14 questions to assess the overall practice on formula feeding. A score of 1 was given for right answer and 0 for wrong answer. The minimal score was 0 and maximum score was 14. The scores were interpreted as follows

**Table 8:** Criteria Measure of Formula Feeding Mothers Knowledge Score

Criteria Measure of Practice Score N=10	
Category Score	Formula Feeding Practice(F)%
Good Practice (11-14)	5(50%)
Average Practice (6-10)	5(50%)
Poor Practice (0-5)	0(0%)

Maximum = 14 Minimum = 0

This table shows 50% of formula feed mothers had good practice on formula feed. 50% of formula feed mothers

**Table 9:** Showing the Descriptive Statistics of practice score of formula feeding mothers, N=10

Descriptive Statistics		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
Practice Score	Formula feeding	10.50	2.068	10.5	7	14	7	75.00

Maximum=14 Minimum=0

This table shows the formula feeding mothers the mean practice score was 10.50 and 75.00%. The S.D was 2.068 and median was 10.5 and range was 7 in the formula feeding mothers.

**3. Finding related compare the mean and standard deviation of babies growth and development regarding breast feeding Vs. formula feeding**

**Comparison of Knowledge Scores**

**Table 10:** Showing criteria measure of knowledge score of both groups.

Criteria Measure of Knowledge Score		
Category Score	Breastfeeding Knowledge (f)%	Formula Feeding Knowledge (f)%
High (17-25)	5(50%)	2(20%)
Moderate (9-16)	4(40%)	8(80%)
Low (0-8)	1(10%)	0(0%)

Maximum = 25 Minimum = 0

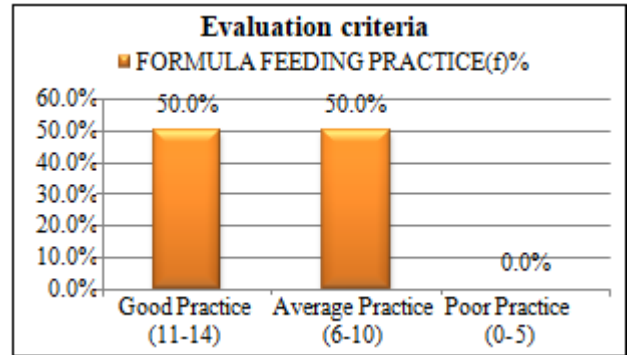
Table showing criteria measure of knowledge score of both groups. In high 50% for breastfeeding and 20% for formula feeding. In moderate 40% for breastfeeding and 8% for formula feeding. In low 10% for breastfeeding and 0% for formula feeding

**Table 11:** Association between mean knowledge score of breastfeeding and formula feeding mothers, N=10

Unpaired T Test		Mean Score	S.D.	N	Mean %	Unpaired Test	P value	Table Value at 0.05	Result
Knowledge Score	Breastfeeding	15.70	4.322	10	62.80	0.516	0.612	2.101	Non Significant
	Formula Feeding	14.80	3.425	10	59.20				

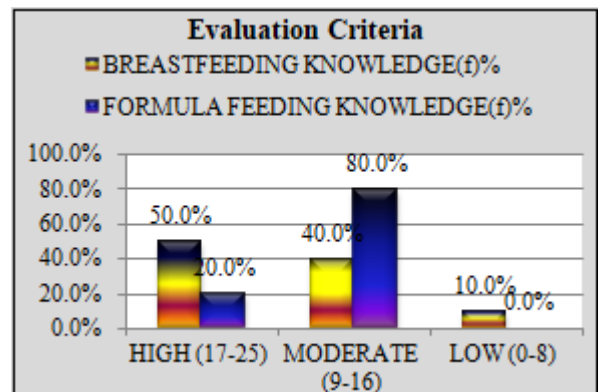
Maximum=25 Minimum=0

had average practice and 0% of formula feed mothers had poor practice on formula feeding.



**Figure 3:** Diagram Showing Level of Practice of formula feed mothers

The bar diagram showing level of practice of formula feeding 50% of formula feed mothers had good practice on formula feed. 50% of formula feed mothers had average practice and 0% of formula feed mothers had poor practice on formula feeding.



**Figure 4:** Showing evaluation criteria measure of knowledge score of both groups

The bar diagram showing criteria measure of knowledge score of both groups. In high 50% for breastfeeding and 20% for formula feeding. In moderate 40% for breastfeeding and 80% for formula feeding. In low 10% for breastfeeding and 0% for formula feeding.

Table showed that knowledge score of breastfeeding and formula feeding were not significant each other.

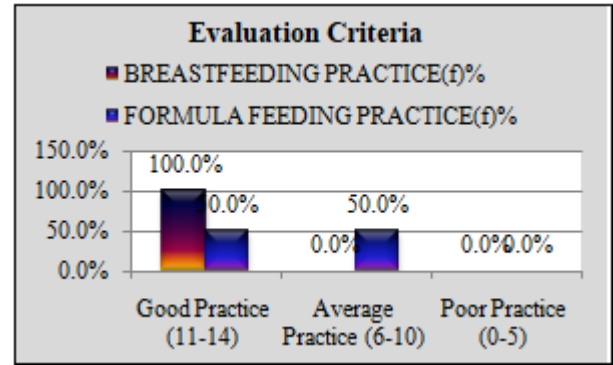
**Comparison of Practice Scores**

**Table 12:** Showing criteria measure of practice score of both groups

Criteria Measure Of Practice Score		
Category Score	Breastfeeding Practice(f)%	Formula Feeding Practice(f)%
Good Practice (11-14)	10(100%)	5(50%)
Average Practice (6-10)	0(0%)	5(50%)
Poor Practice (0-5)	0(0%)	0(0%)

Maximum = 14 Minimum = 0

Table showing criteria measure of practice score of both groups. In good practice 100% for breastfeeding and 50% for formula feeding. In average 0% for breastfeeding and 50% for formula feeding. In poor 0% for breastfeeding and 0% for formula feeding.



**Figure 5:** Showing evaluation criteria measure of practice score of both groups.

The bar diagram showing criteria measure of practice score of both groups. In Good Practice 100% for breastfeeding and 50% for formula feeding. In Average Practice 0% for breastfeeding and 50% for formula feeding. In Poor Practice 0% for breastfeeding and 0% for formula feeding.

**Table 13:** Association between mean practice score of breastfeeding and formula feeding mothers, N=10

Unpaired T Test		Mean Score	S.D.	N	Mean %	Unpaired Test	P value	Table Value at 0.05	Result
Practice Score	Breastfeeding	13.70	0.483	10	97.86	4.764	<0.001	2.101	Significant
	Formula Feeding	10.50	2.068	10	75.00				
Maximum=14 Minimum=0									

The table showed that knowledge score of breastfeeding and formula feeding were significant each other.

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