

# Effectiveness of Planned Teaching Programme on Knowledge and Knowledge of Competencies on Complementary Feeding among the Mothers of Infants

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**Abstract:** *Complementary feeding is complementary to breastfeeding. It should not be suppressing or substituting to breastfeeding. The aim of study to evaluate the effectiveness of planned teaching programme on knowledge and knowledge of competencies on complementary feeding among the mothers of infants. The objectives were To assess existing knowledge on complementary feeding, knowledge of competencies among the mothers of infants, To find out association between socio demographic variables and knowledge of mothers of infants on complementary feeding. Methodology experimental study was conducted by using one group pretest, posttest research design, validated and pre tested tool and PTP on complementary feeding were used for study, total 55 mothers of infants were selected by using inclusion and exclusion criteria, stratified random sampling technique and lottery method during 18 August to 28 September 2006. By using structure interview schedule data was collected at subjects' home by research investigator himself. Both descriptive and inferential statistics methods were used for analysis the data. Results – Major results were Paired 't' test proved that planned teaching programme on complementary feeding was effecting  $\chi^2$  test showed that there were significant association between knowledge and knowledge of competencies of mother of infants. Conclusion: planned teaching programme on complementary feeding is scientific, logical, essential and cost effective strategy.*

**Keywords:** Mothers, infants, complementary feeding, planned teaching programme

## 1. Introduction

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. These methods of self-education has an advantage over the others as the learner can educate himself at his own pace and it also stresses on rereading [1].

Complementary feeding is very old and invaluable process. Even all religion books give information on it. According to WHO, UNICEF and BPNI, exclusive breastfeeding is compulsory for an infant upto the age of six months and then initiation of complementary feeding is a must.

An, old popular word 'weaning' is replaced by 'Complementary feeding'. Weaning literally mean 'to accustom to' or 'to free from a habit'. Complementary feeding complements to breast-feeding[2].

This process is influenced by several factors like availability, socio economic and educational status of parents, family beliefs, customs and attitudes, hygienic practices, use of available health services and marketing of market preparation[3].

So many research studies have proved that complementary feeding plays vital role for healthy growth and development of infant. Research investigator has learnt various shortcomings related to complementary feeding. Important areas are lack of information, policy matters related complementary feeding, knowledge and practices of mothers and related health services.

Information on complementary feeding i.e. not adequately reached from health care providers to grass root level. A study done by Vantmutee A. Mallpur M lessoned that even health professionals do not have adequate knowledge on complementary feeding. Available medical and nursing literature on this topic are also short of information.

Policy matters on complementary feeding differ from country to country and agency to agency. As per WHO, initiation of complementary feeding should be done at about 4-6 months of age where as UNICEF recommends it after 6 months age after birth[4].

Education, guidance, counseling and supervision and demonstration like services related to complementary feeding were poor and inadequately implemented. Seth M, Diwee P (2006) conducted study on complementary feeding and diarrhoea. The result showed that 80% infants had acute diarrhoea[5]. Another evaluatory study conducted by Ladzani R, Stuy N, Nel J (2006) on efficiency of nutrition education programme. It was observed that 26.5% infants had received complementary feeding on 1<sup>st</sup> day life. This indicates that the awareness has not come among the common people[6].<sup>14</sup>

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As far as knowledge and practices of mothers of infants concerning on complementary feeding, an unpublished study conducted by Rathi S and Salunkhe revealed that 90% subjects had poor knowledge and followed traditional practices. Low socio-economic status, poor quality of food, lack of personal hygiene and health services, underused of available resources were reasons for poor knowledge and practices of mothers[7].<sup>15</sup>

## 2. Review of Literature

Literature review is a critical summary of research on a topic of interest generally prepared to put a research problem in context or to identify gaps and weakness in prior studies so as to justify a new investigation.[8]

### Efficacy of planned teaching

Kadam,A.(2014) found that Structured education programme was highly effective to improve the knowledge score and to improve the attitude score of subjects/ caregiver towards colostomy care of patient [9]. Anjum,S.(2014)conducted study to assess knowledge of contraceptives methods and appraisal of health education among married women and concluded After the health education married women knowledge was improved to 100% about female sterilization followed by condom 99%, skin implants 86%, oral pills 85% and emergency contraceptives 85%.Sociodemographic variable were significantly associated with existing knowledge and level of married women specially age at marriage, age at first child, occupation,, income ,education [10][11]. Babu, R. L. (2014) The findings of the study concluded that care takers had inadequate knowledge regarding non-curative care of terminally ill cancer patients. The planned education programme on non-curative care of terminally ill cancer patients was highly effective in improving the knowledge of care takers regarding non-curative care of terminally ill cancer patients.[12] Shinde,M.(2014) concluded that demonstration regarding feeding of hemiplegic patient among caregivers was effective in increasing the skill of the caregivers regarding feeding of hemiplegic patient [13].

Deshmukh, M., & Shinde, M. (2014). concluded that the structured education was effective on knowledge and practice of staff nurses regarding venous access device care[14]. Bhudhagaonkar, J., & Shinde, M. (2014). Concluded that Structured Education Regarding Menstrual Hygiene Practices was effective among Adolescent Girls.[15]

A prospective cohort study was done on breastfeeding and pacifier use in Farta Leza (Brazil). Sample was 500 mothers and their infant and data was collected through structured questionnaire technique. Result showed that 60% subjects were using pacifiers. Research concluded that introduction of pacifier was alarm to health worker to educate and counsel for proper breast feeding and weaning[16].

Randomized control trial study was done on food supplementation with encouragement to feed it to infant from 4 – 12 months age has a small impact on weight gain. Sample size was 418 infants. They made 4 groups, 1<sup>st</sup> group received

milk base cereals and nutritional counseling, 2<sup>nd</sup> group got only monthly nutritional counseling, 3<sup>rd</sup> group received twice weekly home visit and 4<sup>th</sup> group received no any intervention. The results of the study showed that more energy intake was in supplementation group. Same group had shown weight gain as compare to control (visitation group) group [17].

NIN Hyderabad conducted a study on diet and nutritional status of girl child: Samples were pre scholars. Sample size was 308 children out of 192 boys 116 girls. Study results showed that 85% boys had received prolong breastfeeding and 28% mothers of infants had given opinion that boys need extra attention than girls [18].

A study was done on Exclusive breast-feeding as under minded by use of other liquids in rural southwestern Nigeria. It was descriptive study samples were mothers of 4-28 months children and size was 411. Study revealed that only 11% mothers had given EBF. 56% mothers of children gave opinion that there is no need of weaning till one-year age of child[19].

A study was done to find out effects of feeding practices and nutritional status in children. Findings revealed that 92.37% children were breastfeed. Children who were not breast-feeding were found underweight. 50% children received weaning at right time. 83% was malnutrition in bottle fed babies and 55% in Katori fed babies [20].

A comparative study was done by considering ethnographic and demographic reports published between 1873 and 1988 to analyze the indicators of age, introduced of complementary food and determination of breastfeeding. Results suggested that ethnographically reported average ages at introduction of non breast milk liquid (4.5±6 months) and solids (5±4 months) and the duration of breast feeding (29±10 months) among the sample of 113. Such population concordant with those at which key weaning transitions are biologically optimal for most normal healthy children. However wide variations in estimates across populations remains unexplained and serious limitations in the available data preclude proper assessment the underlying distribution of the timing of weaning transitions within populations[21].

A co- relational study was conducted on infant rearing practices and common health problems in infants with selected mothers related variables in an urban slum area of Mumbai. Sample size was 100. Data was collected with an interview schedule, observations and measurements. Finding showed that only 55% mothers of infants had fed exclusive breast-feeding, 89% mothers of infants had started complementary feeding before six months. She specially mentioned that 53% mothers of infants had given breast milk substitutes. Mothers' variables like education, family income, type of family had not shown any significant association with practices of complementary feeding[21].

The study was carried out to know the prevailing customs, and beliefs regarding infant feeding practices. The result of the study were on 90% of mothers of infants started complementary feeding after 6 months to 3 years, out of which 80% gave only rice and milk, 86% mothers gave sugar

water as pre lacteal feed. 64% mothers did not feed colostrums to their children. Investigator highlighted on : 86.25% mothers between age group of 20-30 years and 65% mothers were illiterate and 22.50% studied upto primary school. The themes mentioned by them in the summary were to start breast feeding just after birth, to promote breast feeding, to avoid pre lacteals, to introduce supplementary feeding and weaning between 4-6 months of age [23].

### 3. Methodology

Planning is the cognitive activity that moves the researcher from the broad image of a problem situation in nursing practice to a sophisticated investigation. Data collection is a pragmatic activity that propels the planned study from an idea to an actuality. Research methodology is a way to systematically solve the research problem[8].

#### Research Approach

On the basis of nature of study, objectives, purposes and hypothesis an evaluative research approach was considered most appropriate approach for the proposed study.

#### Research Design

For proposed study one group pre test post- test research design was used.

#### Study Setting

The place where study will be conducted. Present research study was conducted at Kinaye, Tal Belgaum, Karnataka.

#### Independent Variable

PTP on complementary feeding was independent variable

#### Inclusion Criteria

Mothers of infants, who are

- Willing to participate in research study
- Understand and able to speak Kannada or Marathi
- Permanent residents of Kinaye
- Randomly selected

#### Exclusion Criteria

Mothers of infants, who have  
Major health problems

#### Sampling technique and sampling size

Proportionate (3/4) stratified random sampling technique was used in order to have proper representation of the population under study. (Fraction was converted into lowest full figure) – Lottery method was to select village and samples

#### Method of Data Collection

Sample survey method was for data collection by using structured interview schedule. Primary data was collected from primary source (subjects) by investigator himself.

#### Components of Tool

Tool had three parts

- **Part One:** consisted of sociodemographic data of mothers of infants. It had 12 variables
- **Part Two:** Consisted of knowledge of mothers of infants

on complementary feeding, having 36 items. For convenience and analysis purpose it was sub divided into three sub sections namely.

- **Part Three:** Was titled under knowledge of competencies of complementary feeding. Total items were 18

#### Scoring System

Scoring procedure was arbitrary constructed. Score '1' (one) was awarded to correct responses and Score '0' (zero) was awarded to in-correct response.

#### Development of PTP on complementary feeding

The step were

- **Preparation:** research investigator gone through vast review of literature and concern books and journal. He had taken guidance from local experts and guides.
- **Assessment:** Assessed the place and available facilities where ptp will be conducted
- **Drafting:** Made skeleton and detail content – plan of av aids and method of teaching – drafting was approved by firm guides and local research committee

#### Procedure of data collection

- Obtained permission from concern authorities.
- Schedule was drawn.
- Contacted to individual subjects, explained purpose and .research activities and requested for participation.
- Taken written consent after willingness of subjects.
- Conducted pre test and post test by using pre validated and pre tested tool as per research process,

Data was collected at home

- 1) Plan for data analysis
- 2) Descriptive and Inferential statistics were used.

### 4. Major Findings

Major findings of study were 25.71% was mean actual gain in score in the area of knowledge of complementary feeding. Overall gain in knowledge scores on concept of complementary feeding was 43.63%. Over all actual gain in score in the area of nutrition knowledge on complementary feeding was 26.59% Only 18.18% was actual overall gain in score in knowledge of preparation and feeding techniques on complementary feeding Overall gain 13.44% mean score was recorded in the areas of knowledge of competencies on complementary feeding area has shown gain in over all mean score 13.44%. In post test result revealed that 35 subjects had good level of knowledge and 20 subjects had average level of knowledge on complementary feeding whereas 42 subjects had good knowledge of competencies and 13 subjects average knowledge of competencies on complementary feeding, when compared to pre test results.

Majority 37 (62.2) subjects were in the age group of 21 to 25 years and 8(14.5) subjects were below 20 years. It is evident that the system of early marriages and early childbirth is common in the rural communities. It was also seen that most of subjects (53) were house -wives spending their more time in caring of their infants which made them to be well acquainted with practical aspects of infant care and feeding

practices. The fact was evident from the results of pre test on knowledge of competencies on complementary feeding. It was observed that 48 (93.73%) subjects had secondary and above level of education, when compared with national female literacy rate, the education level of study subjects were definitely high, but education status of subjects did not contribute to the knowledge on complementary feeding. It was also observed that 41 subjects belong to joint families and presence of grand mothers in 32 families. It is learnt that two factors had direct influence on knowledge and knowledge of competencies of mothers of infants on complementary feeding.

One-third subjects had monthly family income less than Rs. 2000. Poor economic condition affects on quality, quantity and initiation of complementary feeding. Present study had shown that there was association between family incomes per month and knowledge of mothers on complementary feeding. Therefore economic status plays important role in maintaining health of individual and family as whole. 15 subjects had three or more children. Generally it is said that practice makes man perfect but in the case of these mothers, there was no association between numbers of children and knowledge or knowledge of competencies of mothers of infants on complementary feeding. 35 (63.6%) subjects had infants whose age group was 7-12 months. The PTP motivated those mothers to initiate the complementary feeding by who had not initiated and to them to others who were already practicing, to correct the practices through improvement in the knowledge. It is revealed that 30 mothers had male infants and 25 mothers had female infants. All the mothers had shown keen interest in attaining P.T.P. on complementary feeding. Though 42 subjects had radio or television sets at home which did not show any sign of having correct information about complementary feeding. The reason is in Rural India the mass media is viewed as means of entertainment than information and educational.

Shown that subjects had 51.45% knowledge score in pretest where as in posttest, it was 88.71% on the concept of complementary feeding. Only 25.45 subjects knew the meaning of complementary feeding. The total gain in the concept of complementary feeding was 37.26. This area has recorded maximum gain in the score. Nutrition knowledge of subjects on complementary feeding. The posttest score was 89.77% against 63.18% in pretest, with 26.5 gain in the knowledge of nutrition. The finding of pre test revealed that mothers of infants had good knowledge about nutrition. The pretest result (63.18) reveals that mother of infants were well acquainted with knowledge of preparation and feeding techniques of complementary feeding. Depicts that overall score of knowledge on complementary feeding in pretest was 64.71% posttest was 90.5% with 25.71% gain in the knowledge scores.

This study supports, the study conducted by Rathi S., Salunkhe A (2003, in published) study on infant feeding. The PTP result showed that gain in knowledge score was from 8% to 94%.<sup>13</sup>

Shown that the score of knowledge of competencies on complementary feeding in pretest was 70.90% and in post

test was 84.34% with gain of 13.44%. For better complementary feeding process knowledge and competencies are important, though mothers of infants had better knowledge in pretest, PTP on complementary feed had helped to change some of the wrong ideas and practices about complementary feeding. This result is supported by a study of Ladzani R, Steyn M, Nel J. conducted on mothers provinces study results were increase BF from 60% to 95% before PTP initiation of complementary feeding. On 1<sup>st</sup> day 26.5 but in response to PTP it was reduced up to 6.5%.<sup>14</sup>

Also Rathi S, Salunkhe 4<sup>th</sup> done a study on infant feeding practices result showed that gain in practice score was 6% to 90% in related to complementary feeding.<sup>13</sup> Reveals that in the pretest 33 subjects had poor and 22 subjects had average level of knowledge on complementary feeding. The post test results revealed that 35 subjects had good and 20 subjects had average knowledge level of knowledge on complementary feeding.

Indicates that in the pre test only one subject had good level of knowledge of competencies on complementary feeding but in post test 42 subjects had good level of knowledge on complementary feeding. It is crystal clear that improvement in level of knowledge and knowledge of competencies definitely due to implementation of PTP on complementary feeding by researcher investigator.

Effectiveness of PTP on knowledge of complementary feeding. Calculated 't' value (76.9) was much greater than 't' table value (2) at p<0.05 level of significance therefore. Effectiveness of PTP on knowledge of competencies on complementary feeding. 't' calculated value (16.42) was bigger than 't' table value (2) at p<0.05 level of significance.

Similar findings were reported in a study conducted by Ladzani R, Steyn N, Nel J. (2006) on nutritional education intervention programme. Result of the study was or shows that there was improvement in knowledge and practices of the caregivers of infants on complementary feeding.<sup>14</sup>

Bhandari N, and et. al. (2001) conducted RCT on community based intervention to improve breastfeeding and complementary feeding practices. They found increase in the frequency of complementary feeding and calorie intake among intervention group.<sup>33</sup>

Association between selected socio demographic variable such as educational status of mother, monthly family income and family with grandmother and knowledge of mothers of infants on complementary feeding at p<0.05 level of significance. Where as other socio-demographic variables such as age of mother, type of family, religion of the family, birth order of infant, age of the infant, sex of the infant & available mass media at home did not show significant association with knowledge of mother of infants on complementary feeding at p<0.05 level of significance.

$\chi^2$  calculated values were lesser than  $\chi^2$  table values.

This study was supported by a study, conducted by Pawziw.

Herreq M. Nestal P(2001). The results of the study showed that children from poor family income & whose parents were illiterate had inadequate complementary feeding. They stressed on need of nutrition education programme.<sup>37</sup>

## 5. Conclusions

Based on findings of study the following conclusions are drawn

- Pre-test overall knowledge of competencies score was greater than pre-test overall knowledge score of mothers of infants on complementary feeding.
- PTP on complementary feeding has shown significant gain in score of knowledge and knowledge of competencies of mothers of infants on complementary feeding. So motivation and information on complementary feeding are felt needs of the mothers of infants
- Generally we say there is association between knowledge and practices. This study results have shown that there was association between knowledge and knowledge of competencies of mothers of infants on complementary feeding.

Mothers of infants were using traditional practices, they had mistrusted on complementary feeding, had lack of

### Nursing Implications

The findings of the study has following implications on nursing

#### Nursing practice

For PTP on nutrition education, the pre requisites are

- Assess the knowledge of group, and those factor affecting or helping for desire, behavior, suitable teaching technique, A.V. aids and important one is groups attitude and beliefs
- Guiding counseling and reinforcement are important activities to keep the group in continuation of practice
- Recent information or practices must be introduced to the group as well as those people, who influence the group.
- Nurse must keep in mind, while teaching and demonstrating any healthy habits. The practice is not mechanical, but it has psychosocial and economical impact also.
- Periodical supervise and evaluate the practices

#### Nursing Education

Breast-feeding promotion has achieved optimum level and coverage in people but knowledge and practices of complementary feeding are poor as per WHO, UNICEF.

- The scientific and update information must be included in diploma and degree syllabus.
- Education about complementary feeding is most essential for pregnant and lactating mother as well as all members of society. So plan health education for them.
- Demonstration, role play, workshop along with use of suitable and effective A.V. aids make the greater impact of nutrition education programme
- Mass media like radio, television and newspaper are best and fastest means to reach to people

### Nursing Administration

- Nutritional or any health programme must be based on need, analyzed information and known resources.
- Nurse administrator must plan, conduct and evaluate the programme, which was done for community as well as health professionals.
- Nurse administrate should take efforts to guide and provide competent information and A.V. aids to health professionals to conduct health education programme effectively and efficiently.
- Nurse administrator will find out effective strategy for complementary feeding services

### Nursing Research

- Nursing students must be motivated and guided to conduct research studies
- Present tool will be used by other or modified it for re-use.
- College or university must make compulsory clause / clue / requirement of conduct research study.

### Limitations

- Generalization of the result (as study was related to only rural area and small samples).
- There was no comparison group so effect of extraneous variables were not limited / controlled
- Limitation of sources available.

## 6. Recommendations

Based on study following recommendations are suggested to conduct

- 1) A KAP study on complementary feeding.
- 2) A Comparative study can be conducted in rural and urban area on complementary feeding.
- 3) A study to evaluate the effectiveness of home made and commercial foods of complementary feeding
- 4) A comparative study of PTP on complementary feeding imparted by health professional and other specific group of community

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