EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE, ATTITUDE AND PRACTICE OF MOTHERS REGARDING GROWTH AND DEVELOPMENT AND PATTERN OF GROWTH AND DEVELOPMENT AMONG UNDER-FIVES INA SELECTED PHC OF KOLAR DISTRICT, KARNATAKA

Thesis Submitted In partial fulfilment for the Award of Degree of

DOCTOR OF PHILOSOPHY IN NURSING

By

Mrs. RADHA M.S.

Under The Guidance of

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SEPTEMBER-2017

DECLARATION

I, Radha M.S., hereby declare that this dissertation/ thesis entitled **"Effectiveness of Self Instructional Module on Knowledge, Attitude and Practice of Mothers regarding Growth and Development and Patterns of Growth and Development among Under-fives in a selected PHC of Kolar District, Karnataka"** submitted by me for the award of Degree of Doctor of Philosophy in Nursing is a record of research work carried out by me during the period from April 2007 to September 2017 under the guidance and supervision of **Prof. Dr. B.A. Pataliah,** and that this has not formed the basis for the award of any Degree, Diploma, Associate-ship and Fellowship, titles in this or any other University or other similar institutions of higher learning.

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ABSTRACT

Children are the greatest gift of God to humanity. The young child's well being is of a great concern today, is not only of the child's family but also of the nation. Many significant developments to be made can wait but the child's growth and development cannot. Mothers can act as key intervention agents in their children growth and development. Hence mothers' involvement and education offer a means for mothers to build a positive perspective about their child. Intervention works best when parents and professionals collaborate and work together towards common goals for the children. Every mother exhibits the thirst to have clear information about growth and development of their children. Many researchers have evidenced that beginning years of child's development are important in laying the foundation for lifelong achievements and health outcomes.

The present study aimed at assessing the effectiveness of Self-Instructional-Module in relation to growth and development of under-five children on Knowledge, attitude and practices of mothers of under-five children and pattern of growth and development of under-five children. By using a quasi experimental two groups before and after intervention design, the study was conducted at Guttahalli and Keeluholali rural area, Kolar District. The sample size consisted of 300 mothers of under-five children (150 each in experimental and control group), and non-probability purposive sampling technique was adopted to select the samples.

The data collection was done by using structured knowledge Questionnaire, Likert,s Scale for attitude and an Observational Check List to assess the practice. Growth of under-five children was assessed by measuring the Height and weight and development was assessed by using DDST-II. Data analysis was done by using descriptive and inferential statistics.

The major findings of the study revealed that, in the pre test, none of the mothers had good knowledge regarding growth and development of under-five children in both groups. The Majority (**98%)** of the mothers in both the groups showed favourable attitude. Only **0.7%** of the mothers from the Experimental group had adequate practice. Whereas, in the post test, the majority (**98.7%)** of mothers in the Experimental group and only **1.3%** of mothers in the Control group showed good knowledge. Majority (**94%)** of the mothers in the Experimental group, showed most favourable attitude and only **1.3%** of the mothers in the Control group, showed most favourable attitude. The Majority (**98.7%)** of the mothers in the experimental group showed adequate practice and none in the Control group, showed adequate practice.

Related to growth and development of under-five children before and after the intervention, the findings revealed that the Majority **(54.7% & 42%**respectively), of under-five children had stunted height for age in the experimental and control group, **49.3%** of under-five children in the experimental group and **30.7%** in the control group had under weight for age,none in the experimental group and **2.7%** in the control group had delayed developmental milestonesbefore the intervention. Whereas after the intervention, **78%** of under-five children in the experimental group showed normal height for age and **43.3%** of under-five children in the control group showed stunted height for age,**87.3%** of under-five children in the experimental group and **51.3%** in the control group showed normal weight for age, and **100%** of under-five children in the experimental group remained in acceptable level of development.

Related to effectiveness of SIM, paired 't' test findings comparing the knowledge, attitude and practice scores of the mothers before and after the intervention in the experimental group revealed significant difference(**p<0.05**) at 0.05 level significance. Further, independent 't' test findings comparing after intervention scores of the knowledge, attitude and practice of mothers between experimental and control group showed a significant difference (**p<0.05**) at 0.05 level significance.

With regard to comparison of the growth and development of under-five children, paired't' test findings comparing the growth and development of under-five children before and after intervention in the experimental group revealed significant difference (**p<0.05**) at 0.05 level significance. Further, independent't' test findings comparing after intervention scores of growth of under-five children between experimental and control group showed significant difference (**p<0.05**) at 0.05 level significance.

Regarding association between demographic variables and after intervention knowledge, attitude and practice scores of mothers of experimental group revealed significant association(**p<0.05**) with variables like occupation, religion, type of family, source of information and gender of the child at 0.05 level significance. Whereas in the control group none of the variables showed significant association with the post test knowledge, attitude and practice scores of mothers

Related to association between growth and development of under-five children and knowledge, attitude and practice scores of mothers after intervention, findings revealed significant association **(p<0.05**) in the experimental group at 0.05 level of significance.

Whereas in the control group findings does not reveal significant association between growth and development of under-five children and post test scores of knowledge, attitude and practice, at 0.05 level of significance.

The study findings have implications to nursing practice, education, administration and research on the whole, as it emphasizes the effective improvement in the knowledge, attitude and practice of mothers who were exposed to the SIM regarding growth and development of under-five children which has improved growth and development of under -five children as a key for evidence based practice.

Finally, the researcher recommends for continuous ongoing educational programmes for the mothers by using SIM to provide optimal growth and development for under-five children.

Key Words: Mothers, Knowledge, Attitude, Practice, Self-Instructional-Module, Growth and development, Under-five children**.**

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INTRODUCTION

Today's children are Tomorrow's adults, the then leaders and activists. Future of the nation is determined by the quality and personality of these children. They are the hope and assets of any nation. Hence investing in growth and development of a young child is like laying foundation for prosperous and sustainable nation.

Growth and development of a child refers to changes that occur in child from the time of birth till they reach adolescent in terms of their physical structure, achievement of gross and fine motor skills, cognition, development of communication skills, development of moral and spiritual values, learning and enjoying various types of play, development of likes and dislikes of food, development of emotions, adaptations to the societal roles and acceptance of social responsibilities

The growth and development of an individual extend throughout the life cycle, however the remarkable changes occur between conception and end of adolescence. This period of growth and development is a complex one and requires utmost care and attention as during this period two small cells joins together and makes thinking, feeling individual, who finally becomes a responsible member of the society.

The beginning years of child's growth and development i.e. the first five years are more important. These five years of life lays the foundationfor the future structure in terms of health, adaptation to the rules and regulations of the society and environment, achievements in learning and life in general. There is a strong connection between the child's growth and developmental experiences in first five years of life and their success in future life.

A child explores the world through his mother. She is the encyclopaedia, guide, teacher, facilitator, and friend to the child. Child experiences and learns all emotions, skills, ethical and moral valuesfrom the mother and the encouragement, support and opportunities received from family members as well.

The moment a woman delivers the child, she becomes a mother. The Child becomes her world. The Whole of her thinking will be revolving around the child. The love and affection of the mother for her child is immeasurable, beautiful, powerful and sacred. No words can describe mother's love to her child. The bond and the interaction they develop is very strong and through that interaction mother inculcates appropriate patterns of growth and development for her child's future life

As per the Jewish proverb, "as GOD cannot be present everywhere and every time, he has created mother". Hence mother has an important role to play in her child's life. If she fails in her duties, the child suffers. If she copes skillfully, she will become a very good guard for child's future life. She stands as abottom step of the child's achievements in terms of attaining optimal patterns of growth and development.

To optimize growth and development of underfive children, mothers should have a basic understanding of developmental milestones, environment that she should provide, the type of nutrition, the type of stimulation in terms of play and toys and practices in terms of hygiene and safety, that the mother should adopt to achieve these milestones. This awareness also helps the mothers to set age appropriate expectations from their underfive children, which has the greatest impact on the mother and child interaction in terms of discipline

Family or the Home environment is one of the most important factors in determining the patterns of growth and development of under -five children. The support the family extends to the mother in bringing up of underfive child and facilities and opportunities provided for underfive children in terms of stimulation, plays a vital role in the achievement of optimal growth and development potentials of underfive children.

The goal of paediatric nursing and a paediatric nurse is providing preventive, promotive, curative and rehabilitative care to children throughout their health and illness continuum, from conception till adolescence and helping them to achieve their optimal growth potentials. A paediatric nurse can achieve this goal by creating awareness through **Information Education and Communication (IEC)** campaigns among mothers and school teachers both in the hospital and community.

Hence mothers require specific instructions on normal growth and development, nurturing and child rearing practices during prenatal period itself. Because many normal developmental changes in an under five can disturb an unprepared mother, such as a toddler's

diminished appetite, temper tantrums, negativism, altered sleeping patterns etc. Adequate information on growth and development empowers the mothers to use the information as a means of building competence in her mothering abilities

This justifies the need to establish a teaching strategy on growth and development to enable the mothers to enjoy the greatest most rewarding toil,i,e, the mother of a successful and responsible human being. Thus we all can strive towards the day when the nation will be judged not by their military or economic strength, not by the splendour of their capital cities and public buildings but by the well being of their children.

NEED FOR THE STUDY

Children constitute the most important and vulnerable segment of the population of our country. According to Census of India, 2011, 13.59% of India's population constitutes 0-6 years and 14.55% among them are from rural India.

The Government of India in 1974 has passed a resolution while adopting the National Policy for Children that adequate services should be provided to the children, to ensure their full physical, mental and social growth and development. These services should be provided, throughout their period of growth and development, by understanding the importance of early child hood development in maximizing their future wellbeing.

Growth and development is a phenomenon that happens exclusively for children. This occurs normally with the provision of adequate nutrition, prevention of infection and positive or favorable genetic and environmental influences. The contributions made during the first five years of life of the child, in the context of above mentioned factors, determines the child's total personality

As per **United Nations Convention on the Rights of the Child (UNCRC),** children have the right to all forms of development i.e. emotional, cognitive, and physical in a family environment which enables them to reach their growth potentials. They also have right to quality care, good nutrition, education, recreation, protection from violence, abuse and discrimination, which influences the attainment of optimal growth potentials.

The Home environment is one among the important factors which determine the growth and development of an under five child. Along with the Home environment, time, money, efforts made by the mother in bringing all round development of the child, decides its future life. The birth of a child is an enjoyous and anxious event for the mother and family. Growth and development of the child and its patterns are always a matter of concern for them. Rearing of a child is an art as well as science which demands a body of competent knowledge, attitude and skill which are influenced by the cultural and religious beliefs of the family and community or society at large.

Nair M.K., et al(2009), conducted a survey to assess the prevalence of developmental delay, deformity and disability among under-five children, in India. 12520 under five children were selected randomly and assessed for their anthropometry and development by

using Denver Developmental Assessment checklist. Frequency and percentages were used to analyze the data. Results revealed 2.31% of prevalence of developmental disabilities among 0-2 yrs children and 2.62% of prevalence of developmental disabilities among 2-5 yrs children. They have concluded by calling for policy implications in identifying childhood disabilities.

Jeharsae R., et.al (2013), conducted a study at Thailand to identify the prevalence of growth and development delay among 498 under-five children who were affected with low-intensity armed conflict. They have assessed Growth parameters for weight-for-age, height-for-age, and weight-for-height, Development, by using Denver Development Screening Test II (Thai version), and child rearing practices, and developmental stimulation of mothers by using questionnaire. Results revealed 19.3% prevalence of underweight, 27.6% prevalence of stunting, 7.4% prevalence of wasting and 37.1% prevalence of developmental delay. Regarding childrearing practices, 16% followed exclusive breast feeding, 19.7% fed breast milk for more than 12 months, 44.8% had immunized their under-five children completely. With regard to developmental stimulation, 84.3% used singing, 70.9% used storytelling, 89.2% used reading, and 99.4% allowed group playing. Investigators have concluded saying that community based intervention is required to improve the health status of the under-five children.

Routray S., et.al. (2014) conducted a cross sectional study to assess the growth and development of under-five children living in orphanages, in India. Physical growth was assessed by measuring anthropometry and development by using Denver Developmental screening Kit. Nutritional status was assessed by using WHO Z score growth charts and WHO BMI Z score charts. Data was analyzed by using SPSS 16 software. Results revealed, out of 188 children, 22.9% had stunting, 9.8% had wasting and 21.3% of under-five children had underweight. 14.7% had severe stunting, 8.2% had severe wasting and 10.6% had severe underweight. 29.5% of children were found with microcephaly, 8.3% were thin and no child was obese.52.1% of children was found with developmental delay, global delay was found in 32.9% and isolated delay was found in 19.2% of children among them. Finally researchers have concluded that maternal deprivation as the main cause for this in appropriate growth and development in spite of provision of good nutrition in orphanages

The above mentioned literature presents the magnitude of prevalence of growth and developmental deficits in under-five children and also emphasizes the role and importance of mother in the life of an under-five child to achieve its potentials.

Rearing of an under five child is not a child's play. It requires dedication, motivation, preparation and modification in the family and mother from the antenatal period itself. Irrespective of the mothers status in terms of employment, support, economic status, she needs adequate preparation in bringing all round development of her child.

Mothers knowledge on growth and development of under-five child has significant contribution to their wellbeing as it enables the mother to set expectations, to guide the child's learning as and when required and to identify early deviations from normal and prepare the child well in advance to adopt to the changes occurring in their body and behaviour.

Mothers attitude towards growth and development of under-five children is greatly influenced by her knowledge on stages of growth and development and developmental milestones in terms of age appropriate achievements. Attitudes are also influenced by mother's culture, tradition, societal expectations and her own child hood experiences. However, positive attitude helps in setting age appropriate expectations from the child and adaptation of good practices for optimal growth and development of under five children.

Child rearing practices adopted by the mother are further influenced by her knowledge and attitudes. To facilitate the under-five child to attain optimal growth and development she has to provide safe environment, adequate nutrition, stimulating and encouraging environment, age appropriate play activities and love and affection along with hygiene.

UNICEF (2014), conducted a survey to assess the Knowledge, Attitude and Practice of mothers related to early childhood development and school readiness at Solomon Islands. 284 mothers, who were having children between 6 months and 5 years of age, were selected by using purposive sampling technique. Data was collected by using structured questionnaires on health and nutrition, family support for learning and child protection through interview technique. Frequency, percentage and correlation were used to analyze the data. Study findings were discussed under the headings: health and nutrition, family support for learning and child protection.

Related to Health and Nutrition the findings revealed that, 73% of mothers expressed health clinic as source of information on infant and child feeding practices, 97% of mothers initiated breast feeding in the first hour after birth, 48% of mothers practiced exclusive breast feeding for 6 months, 48% planned to continue up to 2 years, majority of the children did not have dietary diversity and 8% of the mothers perceived that their child had some type of disability.

Related to support for early learning, findings showed that 62% of the mothers were engaged in four or more school learning activities, there was no significant correlation between child's gender and mothers involvement in school learning activities at home, child's age and maternal level of education was significantly correlated with mothers involvement in school learning activities at home.

Regarding child protection, 78% of mothers had regular activities outside the house and child was under the supervision of grandmother/father/relative/aunt/or sometimes alone. Further it was found that 11% of children had serious injuries. Majority of the mothers reported that common method of disciplining the child was shake and slap. Study had concluded that Early Childhood Care and Education (ECCE) programmes for mothers are required to improve children's health, cognitive development and social and emotional development

Inadequate knowledge, attitude, and practices of mother in rearing of under-five children may lead to chronic sickness, developmental delay, improper social bonding, poor cognition, and behavioural problems in terms of social and emotional adjustments.

The investigator, during her clinical experience, has come across with many of the mothers expressing their prejudices and misconceptions regarding achievement of developmental milestones of their under-five children and food habits.

However, available literature on impact of mother's knowledge, attitude and practices regarding growth and development of under-five children, especially in rural community, has not been systematically examined. Hence the researcher felt the need to identify learning needs of the mothers of under-five children and educate them so as to reward their effort and dedication which goes into moulding their under-five children as responsible citizens.

STATEMENT OF THE PROBLEM

A Study to evaluate the effectiveness of Self Instructional Module on Knowledge, Attitude and Practice of mothers regarding Growth and Development and Patterns of growth and development among under fives in a selected PHC of Kolar District, Karnataka.

OBJECTIVES OF THE STUDY:

1. To assess and compare the Knowledge, Attitude and Practice of mothers on Growth and Development of under five children before and after intervention
2. To assess and compare the pattern of growth and development of under five children before and after intervention
3. To find out the association between socio demographic variables of mothers with their Knowledge, Attitude and Practice regarding patterns of growth and development of under five children
4. To find out the association between patterns of growth and development of under five children and Knowledge, Attitude and Practice of mothers.

HYPOTHESES:

H_1. There will be a significant difference in Knowledge, Attitude and Practice of mothers Before and after intervention, at 0.05 level of significance.

H_2. There will be a significant difference between the growth and Development of under five children before and after intervention at 0.05 level of significance

H_3. There will be a significant association between Knowledge, Attitude and Practice of mothers and socio demographic variables, at0.05 level of significance

H_4. There will be a significant association between Knowledge, Attitude and Practice of mothers and growth and development of under-five children, at 0.05 level of significance

LIMITATIONS OF THE STUDY:

The following limitations were recognized by the researcher:

1. The study was limited to 300 mothers, who were residing in the selected rural area, Karnataka
2. The study was limited to only literate mothers
3. Purposive sampling technique was used to select the samples
4. Long term effect of SIM could not be evaluated.

OPERATIONAL DEFINITIONS:

1. Effectiveness

Refers to the extent, to which the SIM has achieved the desired gain in the knowledge, attitude, and practice of mothers regarding growth and development as evidenced by an improvement in the post-test scores, improvement in the growth and development of under-five children and positive opinion of mothers of the Experimental group.

2. **Self-Instructional Module**

Refers to systematically developed detailed instructions to provide information to the mothers on

- Factors influencing growth and development
- Various domains and pattern of growth and development
- Importance of nutrition and play in child's growth and development
- Problems of growth and development
- Anticipatory guidance
- Positive child rearing practices

3. Knowledge

Refers to the level of understanding of the mothers regarding growth and

development as measured by the correct verbal responses to items on the knowledge interview guide

4. **Attitude**

Refers to the mothers' positive/negative feelings and beliefs towards growth Anddevelopment of a child as assessed by Likert's (5point) scale on Attitude

5. **Practice**

Refers to the verbal responses related to activities, which the mothers undertake in relation to positive child rearing activities as measured by an Observational Checklist on child rearing practices of mothers

6. **Growth**

Refers to the child's height measured in terms of centmeters using an inch tape andweight measured in kilograms using a weighing scale

7. **Development**

Refers to motor, cognitive, psychosocial, moral, sexual and spiritual development ofthe child

8. **Mothers**

Refers to the mothers who are having children between zero to five years of age

9. **Patterns of Growth and Development**

Refers to the sequential order in which series of growth and developmental changes occurs.

10. **Selected Demographic Variables**

Refers to the age, education, occupation, the family income,the type of family, number of children, gender of the child and the source of information to the mother

CONCEPTUAL FRAME WORK OF THE STUDY:

Conceptual framework refers to the interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. The present study is aimed at developing and evaluating the effectiveness of Self-Instructional Module on growth and development of under-five children among mothers of under-five children

The conceptual framework of this study is based on Context, Input, Process and Product (CIPP) model on evaluation developed by **Daniel Stufflebeam (2003).** It aims to provide an analytic and rational basis for programme decision making based on the cycle of planning, structuring, implementing and reviewing and revising decisions. Each examined through a different aspect of evaluation- context, input,process and product evaluation. CIPP model provides a comprehensive systematic continuous ongoing framework for programme evaluation.

Concepts of Stufflebeam evaluation

- Context evaluation
- Input evaluation
- Process evaluation
- Product evaluation

Context evaluation

Context Evaluation assesses the socio-political, organizational and other contextual variables associated with the need for learning objectives, courses and supports efforts which help in decision making and to define goals, set priorities and outcomes.

In this study context evaluation refers to:

- Demographic variables of mothers and their under-five children, such as
- Age
- Education
- Occupation
- Family income

- Type of family
- Religion
- No of children
- Source of information
- Age of the child
- Gender of the child

Based on findings of other studies and related literature, it is assumed that the mothers of under-five children have inadequate knowledge, attitude and practice on growth and development of under-five children.

Input evaluation

Input evaluation assesses the alternative approaches competing action plans, specific resources, strategies to meet the needs identified in the context evaluation. It involves steps and resources needed to meet the goals and objectives. It serves as a basis for structuring decisions.

In the present study input refers to the,

- Development of structured knowledge, attitude and practice questionnaire on growth and development of under-five children
- Development of Self-Instructional Module on growth and development of under-five children
- Validation of structured knowledge, attitude and practice questionnaire and Self-Instructional Module on growth and development of under-five children
- Establishment of reliability of the tool
- Selection of the sample
- Framing a research design

Process evaluation

Process evaluation formatively assesses the implementation of plans to guide activities and later to explain and interpret outcome.

In the present study it refers to,

- Assessing knowledge, attitude and practices of mothers of under-five children regarding growth and development of under-five children before and after administration of Self- Instructional Module
- Administration of Self- Instructional Module
- Assessing the patterns of growth and development of under-five children by using WHO growth standards
- Assessing the opinion of mothers regarding Self- Instructional Module

Product evaluation

Product Evaluation helps to identify both intended and unintended, short term and long term, outcome to keep the process on track and comparing them to the anticipated outcome. It can be decided if the programme should be continued, modified or dropped altogether.

In this study product evaluation refers to,

- Comparing the pre-test and post-test knowledge, attitude and practice scores
- Comparing pretest and post test patterns of growth and development of under-five children
- Finding the association between knowledge, attitude and practices of mothers regarding growth and development of under-five children and selected demographic variables.
- Finding the association between knowledge, attitude and practices of mothers regarding growth and development of under-five children and patterns of growth and development of under-five children

This step of the model further leads to recycling decisions and need for modification to terminate which is not in the preview of this study

This chapter highlighted the review of literature, need for the study, and statement of the problem, objectives, hypotheses, limitations, operational definitions and conceptual framework adopted for the study.

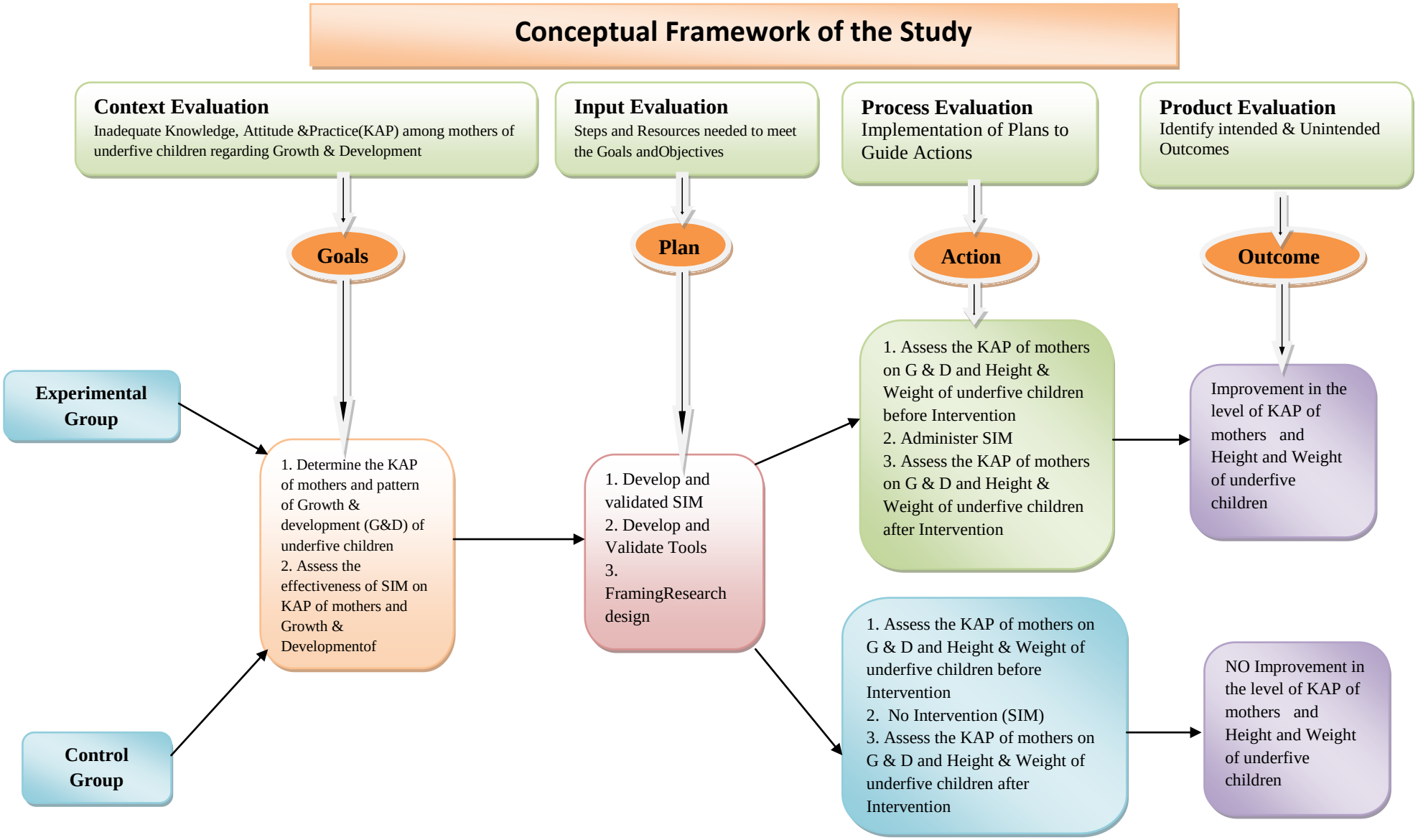

Figure-1: Conceptual Framework to Evaluate the Effectiveness of Self-Instructional-Module on Knowledge, Attitude & Practice of Mothers and Growth and Development of Underfive Children based on CIPP Model (2003)

CHAPTER- II

REVIEW OF LITERATURE

This chapter presents a literature review related to the research topic. Literature review helps the researcher to identify existing theoretical body of knowledge in their area of interest. It helps to determine the strengths, weaknesses and gaps in the existing knowledge related to the topic of interest. On a nutshell it is a written summary regarding what is known and not known regarding the area of interest of the researcher.

The review of literature gathered for the present study is presented under the following headings

1. Literature related to the pattern of growth and development among under-five children.
2. Literature related to Mothers knowledge, Attitude and Practice regarding growth and development of under five children
3. Literature related to effectiveness of self-instructional module on Knowledge, Attitude and Practices of mothers

1. Literature related to patterns of Growth and Development in under-five children

The terms growth and development, the dyad, peculiar to pediatric age group, plays a vital role in the first five years of life of a child as it determines the future life of a child as a responsible citizen. The pattern of growth and development is unique to each child and are influenced by various factors.

Major factors which are influencing growth and development of under-five children are health of the mother during pregnancy and postnatal period, personal and social environment, nutrition, socio-economic status of the family, health of the child and child rearing practices adopted by the mother. All these factors play a synergistic role in the optimal growth and development of a under-five child. If these factors are not favorable, results in developmental delay or deviance.

According to **WHO (2009)**, risk factors for growth and development of under-five children can be specified according to the age like newborn, the factors are caregiver-newborn relationship and interactions, developmental or sensory impairments and infections.

During early years of life, child care practices, nurturing, stimulation, nutrition, housing, environmental hygiene, care giver education, and pre-school opportunities.

Growth and development of under-five children are expressed in terms of physical growth, i.e. height for age, weight for age and achievement of age specific milestones in the domains of cognition, gross motor development, fine motor development, communication and developing psycho-social relationships with mother and family members.

Pem D (2012) has done a review of literature at Bhutan, to identify the factors affecting growth and development of under-five children through prevalence of growth and developmental problems. Findings revealed, 15% prevalence rate of problem in cognitive development, 33.5% prevalence of stunting in under-five children and 9.9% prevalence of low birth weight. Findings also identified nutrition, behavior of parents, cultural and social practices of the family, and environment as five major factors contributing to the growth and development at early childhood. Researcher has recommended for appropriate interventions during this period to promote better cognition and learning abilities in under-five children as these interventions helps mothers to adopt good child rearing practices.

Bello, I.A., et.al(2013), assessed 330 under-five children, who were selected randomly from rural area, at Ghana, for their gross motor skills, fine motor skills, communication skills, cognition and social/personal interaction using Ages and Stages Questionnaire. Socio demographic data of the mothers of those under-five children was collected. Data was analyzed in terms of frequency, percentage and chi-square by using SPSS version 19. Findings revealed, 5.8 % children having delay in communication, 6.7% having delay in gross motor domain, 9.7% having delay in fine motor domain, 10.0 % having delay in cognition and 12.4% having delay in social personal interaction. Findings also revealed significant association between the birth weight, gestational age of the child and mother's education, and communication and gross motor skills

Ertem, I.O., et.al (2016), conducted a descriptive study at Turkey, to assess knowledge of mothers on development of their children during early years of life. 1200 mothers' were selected by using simple random samplingand their knowledge was assessed by using Caregiver KnowledgeofChild DevelopmentInventory(CKCDI). Findings revealed, most of the mothers were not aware that vision (52% of mothers), speech (79%of mothers), social smile (59%of mothers) and brain development (68% of mothers) begins during the

early months of life. Study has recommended for educational intervention programme for mothers to improve knowledge regarding early childhood development

Dabar, D., et.al **(2016)**, conducted a cross-sectional study at New Delhi, to assess the socio-emotional and cognitive development, and associated factors among 520 under-five children by using Indian Council for Medical Research Development Screening Test. Frequency, percentage and chi-square were used to analyze the data. Results revealed that 10.6% of children exhibited developmental delay and strong association between stunting and paternal education, alcohol abuse, and attendance in anganwadi/playschool. Researchers have concluded that developmental delay during first five years may significantly affect the future life potentials.

Butchon, R., and Liabsuetrakul (2017), conducted a cross-sectional study at Thailand, to estimate the prevalence of growth and developmental delay among under-five children and to find out its association with the maternal age. Samples were 70 Mothers aged below 34 years and admitted in the postnatal ward of a regional hospital and their first child. They were selected by using purposive sampling technique. Data was collected by using structured questionnaire through interview. Child's height and weight are measured. Development was assessed by using Denever II. Data was analyzed by using frequency, mean and standard deviation and univariable and multiple logistic regressions. Findings revealed prevalence of 14.3% of children with language, 10% of children with gross motor, 5.7% of children with personal-social, and 2.9% of children with fine motor developmental delay. With regard to growth findings showed, prevalence of 6.2% of underweight and 15.6% of stunting among toddlers, 5.3% of wasting among preschool age children. There was no significant association between growth and development of under-five children and maternal age. Researchers have concluded that early intervention programmes for mothers are required to identify developmental delay and for remedial measures.

2. Literature related to Mothers Knowledge, Attitude and Practices Regarding Growth and Development of under-five children

Each society will have its own customs, beliefs, and practices in child rearing. In our country, though there is an Extensive Advancement in science and technology, changes in these practices are negligible in many of the child rearing aspects. Mother, being the main care provider of an under-five child, working or home maker, residing in the urban or rural

area, her knowledge, attitude and practices plays a vital role in the growth and development of an under five child.

Bond L.A., et.al (2006), examined the relationship between mothers' beliefs about knowledge and conceptions of child development and parent-child communication strategies at USA. 120 mothers of preschool children were selected by using purposive sampling technique. Data was collected by using concepts of development questionnaire and Parent Communication Strategies Interview. Analyses revealed that mothers had inadequate knowledge, with more complex understanding of growth and development of children. They also found that parenting strategies were less authoritarian and challenging to the children for their cognitive development. Researchers have concluded that preventive teaching programmes need to be implemented in order to promote good concepts of child development among mothers.

Millis, et.al (2007), conducted a cross-sectional survey on caregiver knowledge, attitude and practices regarding Vitamin A intake by Dominican children. 151 caregivers were recruited by using purposive sampling technique and their knowledge, attitude and practices were assessed by using questionnaires. Results revealed a low level of caregivers' knowledge and attitude regarding Vitamin A intake and practices also were very poor. And they did not find any association with socio-economic status and level of education. Researchers have recommended for nutritional educational programme for caregivers of children and also for cultivation of home gardens.

Thomas, et.al (2007), conducted a cross sectional study to assess the knowledge, attitude and practice of 120 mothers regarding parenting of children less than 3 years of age, both from rural and urban areas of South India. Mothers were selected by using purposive sampling technique. Mothers were interviewed in their homes using a structured questionnaire on knowledge, attitude and practices of mothers related to growth and development of children from birth to three years. Frequency and percentage were used to analyze the data. The majority of mothers had moderately adequate knowledge, unfavorable attitude and poor practices regarding parenting. Researchers have recommended for educational programme for creating awareness regarding growth and development of children.

Ramji S., (2009), conducted a review of literature at New Delhi, India, on impact of feeding and caring practices of mothers on health and nutritional status of their children.

Evidences suggested that inadequate feeding practices of mothers are the cause for under nutrition among children. Further to rectify these practices, interventions need to be planned by involving both family and community in a participatory manner, so that they will become change agents in promotion of child health.

Bornstein M.H., et.al.,(2010), assessed and compared knowledge of European and American mothers who had children between 0-2 years of age, on parenting skills. Comparison was made between social status and adult mothers and adolescent mothers. The sample size was 268 and was selected by using simple random sampling technique. Frequency, Percentage and Chi-square were used to analyze the data. Findings revealed inadequate knowledge among mothers in parenting skills, in general. Significant association was found between knowledge and socio demographic variables like age, education, number of children and support from the family members. Study has concluded that educational programme is required for mothers irrespective of age, and parity to improve the growth and development of under-five children.

Bhanderi D., and Choudhary, S.K.,(2011), conducted a cross sectional study at Gujarat, India, to assess the attitude, beliefs and behaviour regarding feeding practices of mothers of under-five children and the influence of epidemiological factors on these practices, with a sample size of 300 mothers. Mothers were recruited by using purposive sampling technique. Frequency, percentage and chi-square were used to analyze the data. Findings of the study revealed that regarding initiation of breast feeding, 23.7% of mother's breast fed their children with in first hour of life. 44.7% of mothers initiated within 16 hours and rest within 7- 12 hours or more. With regard to feeding of colostrums, 76.3% mothers fed colostrums. Regarding exclusive breast feeding, 76.6% of mothers followed up to Six months, 23.3% of mothers for 4 months. 76.7% of mothers did not give any top feed. Most commonly used top feed was cow's milk, and 2/3rd of mothers given in undiluted form for their children. 80.7% of mothers initiated complementary feeds at 4 months and commonly with rice and daal. 49.8% mothers expressed a opinion of breast feeding exclusively for more than six months, whereas 24.9% said for 4 months.

Researchers have also found that the child rearing and nutritional practices are bounded by a wide range of customs and beliefs like hot foods, cold foods and harmful foods for the child. Jaggery, papaya, eggs, mangoes were considered as hot foods by 24.0% of mothers. Banana, curd/butter milk, ice-creams and fruits like guava were considered as cold

for the child by 34.3% of the mothers, which deprives the child from getting essential nutrients from those food sources. Study has concluded that health professionals must play a major role in removing these myths and false beliefs among the mothers in order to provide good physical, mental and social health during the most important first five years of child's life.

Imdad, A., et.al (2011), conducted a systematic review of published experimental and quasi-experimental studies on Pub med, Cochrane Library and WHO regional databases, to identify impact of maternal education regarding complementary feeding and provision of complementary foods on growth of their child in developing countries. They concentrated on outcomes in terms of change in weight and height of children aged between 6-24 months, during the study period. The findings of the studies were analyzed by using Meta analysis. The results revealed that provision of appropriate complementary foods (±nutritional counselling) resulted in an extra gain of 0.25kg (±0.18) inweight and 0.54 cm (±0.38) in height in children aged 6-24 months. Reviewers have concluded that along with the provision of appropriate complementary foods, nutritional counselling to the mothers is required to improve the growth of children in developing countries.

Harnagle R., and Chawla,P.S., (2013), conducted a survey in India, to identify the knowledge, attitude and practices on breast feeding, weaning, immunization and dietary practices among lactating mothers from rural background.105 mothers who had children below 23 months of age were selected by using purposive sampling technique. They were interviewed by using semi-structured questionnaires on KAP related to child health. Survey findings revealed that mothers' knowledge, attitude and practices related to child health were inadequate. Hence they have recommended for implementation of awarenessprogramme on child health and related factors on an emergency basis to improve the child health.

Sriram S., et.al(2013), conducted a survey at Ahmedabad, India, to assess the knowledge, attitude and practices of mothers who were attending a tertiary care center by using a structured questionnaire. Mothers were recruited by using purposive sampling technique. Frequency and percentage were used to analyze the data. An interview technique was followed to collect the data from 150 mothers. Findings revealed that mothers had good knowledge (90.67%) regarding feeding practices, but practices were (30%) inadequate because of social and economic constraints. Researchers have concluded that counselling by

health professionals will have good impact on attitude and practices of mothers regarding child health.

Saeidi M., et.al (2013), conducted a cross-sectional descriptive analytical study in India, to assess the relationship between mother's educational status and child rearing practices of children. 300 mothers were selected by using cluster and simple random sampling technique. Practices were assessed by using questionnaire. Data was analyzed by using SPSS 16 version. Findings revealed that mother's with good educational background had better child rearing practices like giving less junk food, using oil and butter in the child's food, and monitoring of child's growth. Hence they have concluded that mother's educational status influences the child's growth and development.

Shafee,M., and Firdous, R.,. (2013), conducted a cross-sectional survey on Knowledge, Attitude and practices of 500 mothers regarding weaning. Mothers were selected by using systematic random sampling and who had at least one infant at the time of study. Data were collected by using questionnaires on Knowledge, attitude and practices related to weaning, through interview technique. Data was analyzed by using mean, percentage, X^2test and Odds Ratio. Findings revealed that majority of mothers (62%) had knowledge that, weaning should be initiated by 4-6 months of age, but only 35% of mothers initiated by 6 months of age. Only 18% of mothers had knowledge on effects of delayed weaning. Majority (85%) of mothers agreed that baby should take solid foods by one year of age. Findings also revealed significant association with knowledge, attitude and practices and educational status of mothers, at 0.05 level of significance. Researchers concluded that, measures should be taken to improve the literacy level of mothers and also awareness programmes for mothers regarding weaning

Upadhyay D., et.al.,(2014) conducted a survey at Amritsar, India, to assess mothers knowledge regarding growth charting of under-five children. 186 mothers were selected by using stratified random sampling technique. Chi square and 'F' tests were used to analyze the data. Results showed low level (38.17%) of knowledge among mothers regarding the growth charting. There was a significant association between the knowledge of mothers and socioeconomic status and the level of education, at 0.05 level of significance.

Mohammed E.S., et.al **(2014),** conducted a cross-sectional study at Egypt, to assess the knowledge, attitude and practices of mothers living in rural area regarding breast feeding,

complementary feeding and weaning and also to identify the relationship between age and education of the mothers and on these aspects. Participants were 307 mothers who are having children less than 02 years and recruited by using systematic random sampling technique. Knowledge, attitude and practices were assessed by using questionnaires. Frequency and percentage were used to analyze the data. Findings revealed, 92.5% of the mothers said complementary feeding as stop to breastfeeding. 94.8% accepted that breastfeeding prevents infection, 96.1% agreed that breast feeding is healthy food for the child, 76.5% agreed that breast feeding helps in maintenance of body physique, and 83.4% agreed that baby should not be breast fed during mothers' illness. 84% of mothers fed the child within half-an hour of delivery and 42.7% of the used prelacteal feeds. Significant association was found between mother's education and practice of exclusive breast feeding. Study had recommended for health education campaigns to enhance better practices regarding breast feeding.

September, J.S., (2014), conducted a study at Cape Town, by using mixed method approach to compare and study the relationship between knowledge of parents regarding child development and their practices among high and low socio-economic groups of parents with children between 2-5 years. The sample size was 140 parents, were recruited by using simple random technique. Their knowledge and practices regarding child development were assessed by using Knowledge of Infant Development Inventory (KIDI-P) and Parenting Styles Dimension Questionnaire (PSDQ). Frequency, percentage and correlation were used to analyze the data. Results showed that in both high and low socio economic groups' authoritative parenting styles were followed and had moderate level of knowledge.63.6% fed babies within 1 hour of birth. 90.56% of mothers did not practice exclusive breast feeding for 6 months. Findings did not show any correlation between knowledge and practices. Study has concluded with a need for awareness programme for parents regarding child development.

Saaka M.,(2014), conducted an analytical cross-sectional study, at Ghana, to assess the relationship between mothers knowledge and practices regarding child nutrition and growth of under-five children. The sample size was 991 mothers having children between 0-36 months age and were recruited by using purposive sampling technique. Data was collected by using questionnaires and anthropometry. Frequency, percentage and multivariate analysis were used to analyze the data. Results revealed majority (68.2%) of mothers having low level of knowledge and practices on nutrition. 25% of under-five children were stunted and 13.7% of children had global malnutrition and positive association (p=0.05), between

mothers' knowledge and practices on nutrition and growth of 0-36 months age group children. Researcher has concluded that educational programme is required for mothers of under-five children to improve the growth and development of children between 0-36 months of age group.

UNICEF (2014), conducted a survey to assess Knowledge, Attitude and Practices of mothers on early nurturing of under-five children, at Rwanda. 2000 mothers, who were having children between 1-6 years of age group, were recruited by using purposive sampling technique. Data was collected by using discussion guides and semi structured questionnaires through interview and focus group discussions. Data on knowledge, attitude and practices were collected under the headings, child care after birth, feeding practices, child-parent interaction, organized child care, disciplining children and child abuse and communication and source of information. Data was analyzed by using frequency, mean, correlation and't' tests.

Findings revealed the following

Related to child care after birth, low levels of knowledge and practice related to child care after birth, except for immunization (78% Knowledge and 87% practice) and initiation of breast feeding within first hour of delivery (42% knowledge, 62% practice).

Related to feeding practices, 90% of mothers followed exclusive breast feeding for 6 months, only 28% of 1-2 years old children fed with three meals per day and children aged 2 to 6 years old are more likely to have nothing for breakfast, lunch and dinner, may be due to poverty.

Related to Child–parent interaction, the findings showed low levels of knowledge and practice. Related to Organized child care, knowledge was high, but the practice was only 12%, majority responded as children are young and need to be cared at home.Related to Disciplining children and child abuse, majority had adequate knowledge regarding child's rights and punishment if the child is abused. But the practices indicated slapping, caning, beating and shouting at the child. Almost half the respondents believed that a child should be physically punished in order to grow up properly.

Related to Communication and sources of information,Radio is the most common source of information on child care. Study had recommended education of mothers on how

to properly care for their children in areas of nutrition,hygiene, discipline and parenting practices.

Kulkarni, V.G., et.al,(2015), conducted a cross sectional study at Bijapur, India, to assess the impact of maternal literacy on their weaning practices in a rural area. 245 mothers who had children between 0-2 years were selected by using purposive sampling technique. Data was collected through interview method, regarding their complimentary feeding practices. Frequency, percentage and chi-square tests were used to analyze the data. Study findings revealed that literate mothers had better practices compared to illiterate mothers and there was a significant association(X^2=27.01, df=6,p<0.001), between mother's education and age of initiation of weaning. Study has concluded with a recommendation for measures to improve the literacy level of mothers and also education regarding appropriate feeding practices of younger children.

Debuo D.T., et.al ,(2017), conducted a cross sectional study at Ghana, to assess the knowledge, attitude and practice of 300 mothers who are having children between 0 to 23 months, and who were attending growth monitoring promotion sessions, regarding growth monitoring of children at Lawra District, Ghana. Samples were recruited by using multistage sampling technique. Data was collected through face to face interview with the help of semi-structured questionnaires. Frequency, percentages, Pearson chi-square and regression analysis were used to analyze the data. Results revealed that 53% of mothers had good knowledge, 98% of the mothers had good attitude and 70% of the mothers had good practices in growth monitoring promotion activities. 16.2% of the children had flattered growth. Findings also showed association of knowledge with occupation (p=0.013) and educational status (p=0.026), attitude with occupation (p=0.014) and marital status (p=0.009), and practice with tribe (p=0.019) and relationship with the child (p=0.019). Study has concluded that though mothers were attending growth monitoring promotion activities program level of knowledge, attitude and practices were not satisfactory, Information, education and communication (IEC) activities need to be intensified and strengthened through health education and home visiting by health care providers.

3. **Literature related to effectiveness of Self-Instructional Module(SIM) on Knowledge, Attitude and Practices of mother**

Sharma and Nagar (2006), conducted a pre-test-post-test approach on impact of educational intervention on knowledge of mothers regarding childcare and nutrition in Himachal Pradesh. 150 mothers were selected by using purposive sampling technique and their knowledge on care of neonate and infants, growth and behaviour of children and nutrition by using self-administered questionnaire, before and after giving a structured teaching programme, in the form of SIM. Frequency, percentages and't' tests were used to analyze the data. It was found that majority of mothers' knowledge on all the areas was low during pre test. During the post test majority of mothers had (68%) good knowledge. 't' test reveled significant difference between pre and post test mean scores at 0.05 level of significance. Researchers have concluded that educational intervention in the form of SIM is effective in improving the knowledge of mothers.

Hamadani,D.J., et.al (2006),conducted a randomized controlled trial to assess the effect of psychosocial stimulation to the treatment of undernourished under-five children who were provided with nutritional supplementation through community nutrition centres at rural Bangladesh. 204 mothers and 207 children (104 each in experimental and control group) were included in the study. Children height and weight and development on Bailey scales were assessed before and after intervention. Mother's knowledge on childrearing also was assessed by using questionnaire. The intervention was in the form of home visiting and conducting group meetings with the mothers and children. Frequency, percentage and't' tests were used to analyze the data. Results revealed significant difference in mental development ($p=0.02$), vocalization ($p=0.04$),co-operation($p=0.005$),emotional tone($p=0.03$),and mother's knowledge($p<0.001$), of intervention group compared to control group. Researchers have concluded that along with the nutritional supplementation, education on child development and behaviour need to be given to the mothers to improve the growth and development of children.

D'costa A. P.,(2014), assessed effectiveness of SIM at Mangalore, India, regarding weaning practices on knowledge of 50 mothers, who are lactating. Mothers were recruited by using purposive sampling technique and adopted pre-experimental research design. Mothers knowledge was assessed by using questionnaire. Frequency, percentage, 't' test and chi-square tests were used to analyze the data. Findings revealed that before intervention,

80% of the mothers had average level of knowledge and after intervention, 62% of them had good level of knowledge. Findings also showed significant association between knowledge of mothers and socio demographic variables such as mothers' education, occupation, and income, type of family and source of information at 0.05 level of significance. Researchers have concluded that SIM was effective in improving the knowledge of mothers.

Bala E. P.,(2014), conducted a quasi-experimental study to evaluate the effectiveness of SIM on knowledge of 60 mothers of under-five children who are attending play schools, at Chennai, India, regarding prevention of diarrhea. Mothers were selected by using purposive sampling technique. Data was collected by using structured questionnaires. Frequency, percentage, 't' test and chi-square tests were used to analyze the data. Results showed during pre test, 90% of mothers had inadequate knowledge, whereas during post test 70% of mothers had adequate knowledge and there was significant increase in the post test knowledge scores (t=34.002), of mothers at $p<0.001$ level. Researcher has concluded that SIM was effective in improving the knowledge of mothers of under-five children.

Joseph T., and Tata H.S., (2014), conducted a quasi experimental study to find out the effectiveness of health education programme on knowledge of mothers of under-five children regarding control and prevention of Protein Energy Malnutrition at Karad, India. Study was conducted with 60 participants, who were recruited by using purposive sampling technique. Findings of the study revealed. Frequency, percentage and Chi-square were used to analyze the data. Findings showed that before intervention, 41.66% had poor knowledge and after intervention, 55% of mothers had good knowledge depicting the effectiveness of health education programme, in improving the knowledge of mothers. Findings also revealed significant association between socio demographic variables of the mother like type of diet, occupation type of family and their knowledge.

Rathore K.C., et.al (2014), conducted a quasi-experimental study to determine the impact of SIM regarding home management of selected common illness in children on knowledge of mothers at Vadodara, India.60 mothers were selected conveniently from a rural area. Mother's knowledge was assessed by using questionnaire. Frequency and percentage and chi-square tests were used to analyze the data. Findings showed significant increase in the post test (75.88%) knowledge scores compared to pre-test knowledge scores(44.26%) of mothers. There was also significant association between knowledge of mothers and source of

information at 0.05 level of significance. Study has concluded that SIM is effective in improving the knowledge of mothers.

Sukandar.D, et.al(2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices of mothers of under-five children and also on nutritional status of under-five children at Indonesia. Sample size was 240 mothers who were selected by using systematic random sampling technique. Knowledge, attitude and practices of mothers regarding nutrition of under-five children, were assessed by using questionnaires. Nutritional status of under-five children was assessed by using their anthropometric measurements. Frequency and percentage were used to analyze the data on knowledge, attitude and practices and Z-scores were used to analyze the nutritional status of under-five children. Findings revealed improvement in post test scores of knowledge, attitude and practice (mean scores: 53.58, 76.96, 54.87 respectively), compared to pre test scores (34.87, 70.16, 53.33 respectively), in the experimental group. Findings also showed improved Z scores in terms of nutritional status of under-five children in the experimental group. Study suggested planning interventions which influence the beliefs of mothers, in order to adopt better child rearing practices by them.

Rajesh J (2015), conducted one group pre test-post test quasi experimental study to assess the effectiveness of Self-Instructional Module regarding Protein energy Malnutrition in Under five children, in India, on knowledge of 30 mothers, who were enrolled by using purposive sampling technique. Data was collected by using knowledge questionnaire. Frequency percentage and‘t’ tests and chi-square tests were used to analyze the data on knowledge. Findings revealed improvement in knowledge of mothers (mean scores of 22.33, t=16.01, p=0.01) after administration of SIM (pre test mean scores were 10.5) and significant association between knowledge scores and age of mothers.

Gogoi N (2016), conducted a study by adopting pre experimental one group pre-test post test design to determine the effectiveness of SIM on knowledge of mothers of under-five children regarding home management of diarrhea at Assam, India. Knowledge of 40 mothers regarding prevention and home management of diarrhea, who were recruited by using purposive sampling technique, was assessed with the help of questionnaire. Results revealed a significant increase (25.8%) of mean knowledge score from pre test to post test with a paired ‘t’ value of 15.69 at 0.05 level of significance. Study has concluded that SIM was effective in improving the knowledge of mothers of under-five children.

Betageri K., and Tata S., (2016), assessed the effectiveness of structured teaching programme on knowledge of mothers of under-five children regarding utilization of Integrated Child Development Services Scheme (ICDS) services at Karad, India. 60 mothers were selected by using convenient sampling technique from rural background and adopted evaluative research design. Knowledge of the mothers was assessed by using structured knowledge questionnaire regarding ICDS programme. Frequency, percentage and Paired‘t’ test were used to analyze the data. Findings revealed significant difference between Mean pre (14.3) and post (23.3) test knowledge scores($t=38.68$, $p<0.001$) at 0.001 level of significance. Researchers have concluded that structured teaching programme is an effective teaching strategy in imparting knowledge to the mothers.

The review of literature on effectiveness of Self Instructional Module on the Knowledge, Attitude, and practice of mothers regarding growth and development of under-five children revealed, that the mothers had inadequate knowledge, attitude, and practice in terms of enhancing optimal growth and development. Further, it also revealed very few evidences that too investigating effectiveness of SIM on any one aspect.

Thus review of literature justifies the researchers idea of assessing the effectiveness of SIM on knowledge, attitude and practices of the mothers, regarding growth and development of under-five children

CHAPTER –III

METHODOLOGY

This chapter deals with the methodology adopted for the study. It includes research approach, design, setting, sample and sampling technique, tools used for data collection, process of development and description of SIM, procedure of data collection and plan for data analysis.

RESEARCH APPROACH:

In this study, the researcher aims to assess the knowledge, attitude and practice of mothers of under-five children and pattern of growth and development of under-five children before and after administration of SIM in both experimental and control groups. Hence the researcher has adopted a quantitative approach for this study as it helps to explain the effect of the independent variable on the dependent variables.

RESEARCH DESIGN:

The research design adopted in this study was Quasi-experimental two group pretestpost test design.

Schematic representation of the research design is as follows:

Group	Pre test	Intervention	Post test
E	O_1	X	O_2
C	O_1	-	O_2

Key:

E-Experimental Group,

C- Control Group,

O_1 -Pre –test,

O_2 -Posttest,

X- Self-Instructional-Module

RESEARCH DESIGN

Title and Purpose of the study:
Effectiveness of Self-Instructional Module

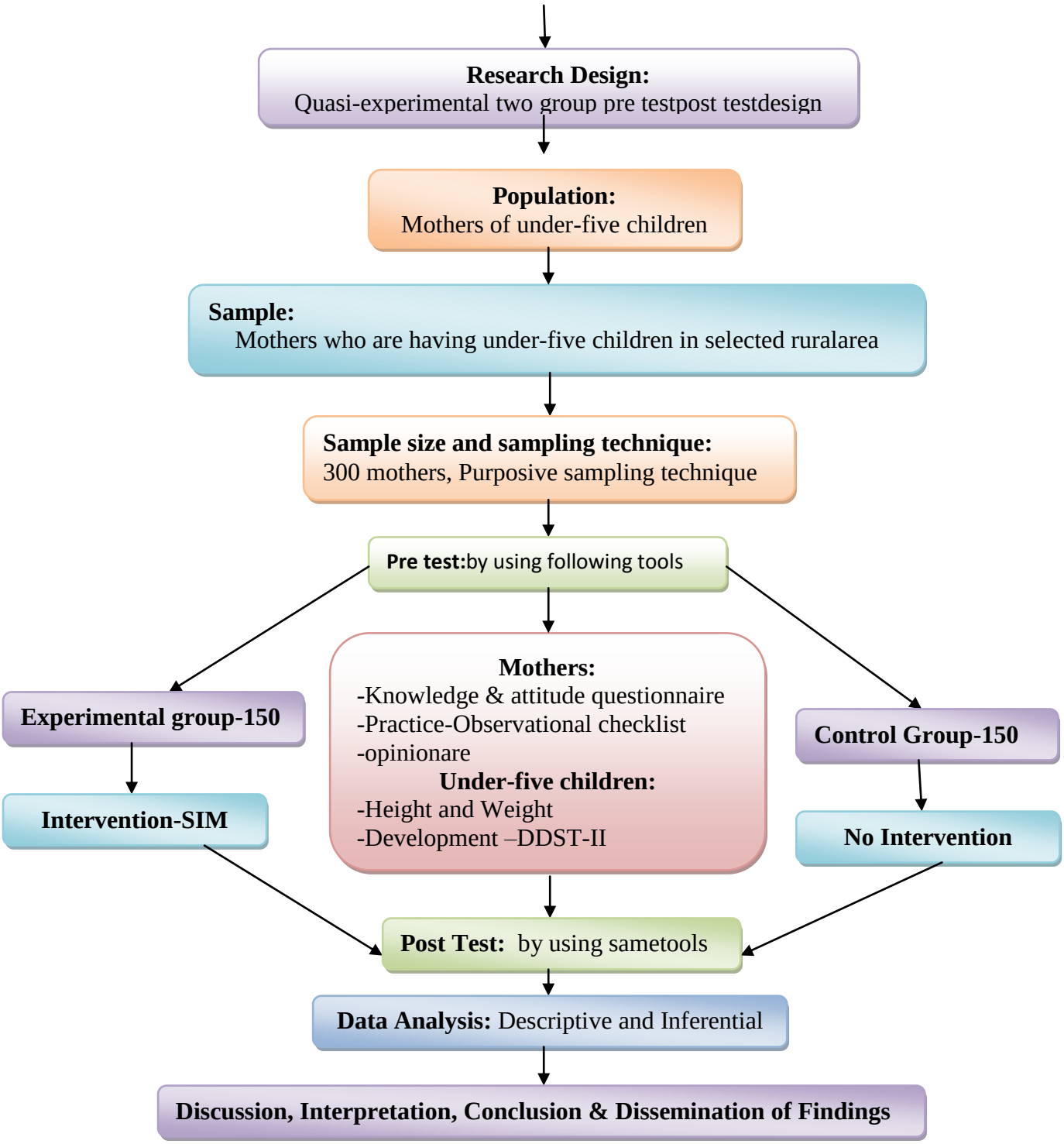

Figure-2: SCHEMATIC REPRESENTATION OF THE STUDY DESIGN

VARIABLES OF THE STUDY

Three types of variables are identified in this study, are as follows:

1. **Independent Variable:**

   An independent variable is the variable which creates an effect on the dependent variable.

   In this study independent variable is Self-Instructional- Module

2. **Dependent Variable:**

   Dependent variable is the response, behavior or outcome caused by the independent variable.

   In this study dependent variables are Knowledge, attitude, Practice and opinion of mothers and height, weight and development of under-five children

3. **Attribute variable**

   Attribute variables are those variables which are present in research environment and may interfere with the research findings.

In this study it refers to selected socio-demographic characteristics like, age, educational status, occupation, religion family income per month, type of family, number of children and source of information to the mother and age and sex of the under-five child.

SETTING OF THE STUDY:

This study was conducted at Guttahalli and Kottamangala villages which are coming under the jurisdiction of DevaryaSamudra PHC of Kolar District. Number of villages under this PHC are 19, number of houses are 2204, and covers a population of 9,807. Three sub centersnamely Devarayasanudra, Kothamangala and Hanumanahalliare attached to this PHC. Kottamangala and Guttahalli villages are coming under the sub centerKottamangala. Total number of houses in Guttahalli village is 321 with a population of 1,311 and total number of houses in Kottamangala village is 300 with a population of 1,887.(**Annexure 3**)

POPULATION:

Population is the entire aggregate of cases that meet the designated set of criteria.

In this study population refers to the Mothers, who are having under five children

SAMPLE:

Mothers, who were residing at Guttahalli and Kottamangalavillages and having children between 0-5 years of age

SAMPLE SIZE:

Sample size was 300 mothers, 150 mothers in the Experimental group and 150 mothers in the Control group

SAMPLING TECHNIQUE:

Non-probability purposive sampling technique was used to select the sample

CRITERIA FOR SAMPLE SELECTION:

Inclusion Criteria: Mothers who were:

1. Able to read, understand and converse in Kannada and English language
2. Having children between 0-5 years of age
3. Willing to participate in the study

Exclusion Criteria:

Mothers, who are not available at the time of data collection

SELECTION AND DEVELOPMENT OF THE TOOL:

Data collection tools are the instruments used by the researcher to observe and measure the variables in the research study.

Development of the tools:

To develop the tools, extensive research and non research literature search was carried out. Suggestions were taken from subject and research experts.

Following steps were taken to develop the final tools

1. Preparation of blue print
2. Development of the tool
3. Development of criteria rating scale
4. Establishing Content validity of the tool
5. Pretesting of the tool
6. Establishing Reliability of the tool

Preparation of Blue Print:

The investigator prepared blue print of the questions, and items are distributed in three domains, namely, knowledge, comprehension and problem solving or application. The percentage of questions in each domain is as follows:

Knowledge domain-60.2%

Comprehension domain-28.6%

Problem solving domain-11.2%

Development of the tool:

Tools developed were organized under the following headings

Tool -1

Structured Knowledge Questionnaire, consisted of following sections

Section A: Demographic data of the mother and child- Twelve items

Section B: Structured Knowledge Questionnaireto assess the level of Knowledge of Mothers regarding Growth and Development of under five children under the following headings

Part I: Meaning and factors influencing Growth and Development-03 items

Part II: Gross Motor Development-08 items

Part III: Fine Motor Development -10 items

Part IV: Language Development-08 items

Part V: Social Development -07 items

Part VI: Physical Development -05 items

Part VII: Sexual Development-05 items

Part VIII: Spiritual Development -02 items

Part IX: Cognitive Development -05 items

Part X: Moral Development-03 items

Part XI: Play, Nutrition and Anticipatory Guidance -14 items

Pattern of Scoring:

Each question had four options, a correct answer, and 03 distracters. The correct answer was scored as 0ne, the wrong answers were given Zero score.

Scores were grouped as follows: Max Score was 70

Knowledge score	Percentage	Grade
<35	**<50%**	**Poor**
35-53	**50%-75%**	**Average**
>53	**>75%**	**Good**

Tool-2:

Likert's (5point) Scale on Attitude (30 statements)

Consisted of statements in relation to the positive/negative beliefs of mothers regarding Growth and Development of children, under the following headings

- Providing freedom to children in the process of growth and development-07 items
- Punishment and discipline- 13 items
- Behavioral expectations- 10 items

Pattern of Scoring:

Score 5 : Strongly agree

Score 4 : Agree

Score 3 : Disagree

Score 2 : Strongly Disagree

Score 1 : Uncertain

The total score for each subject was calculated, converted into percentages and interpreted as follows. Max. Score was 150

Attitude score	Percentage	Grade
<75	<50%	Un favorable
75-113	50%-75%	favorable
>113	>75%	Most favorable

Tool-3:

Observational Checklist to assess the Practice of mothers (68 items)

Pattern of Scoring:

Score 1 for Yes

Score 0 for No

Scores were grouped as follows; Max Score was 68

Practice score	Percentage	Grade
<34	<50%	Poor
34-51	50%-75%	Average
>51	>75%	Adequate

Tool-4:

Self-rating Scale (3point) to assess mothers opinion regarding Self-Instructional Module (10 statements)

Tool-5:

WHO Child Growth Charts on Height-for-Age and Weight-for Age to assess pattern of growth and development of under-five children

Tool-6:

Modified **Denver** Developmental Screening Test-II (DDST-II): Critical Milestones from 2 months to 5 years, to assess the pattern of development of under- five children

Development of Criteria Rating Scale

A criteria checklist was prepared for the validation of Knowledge, attitude, practice questionnaires and Self rating scale, with the criteria of Very Relevant, Relevant, Needs Modification, Not Relevant and Remarks.

Establishing Content Validity of the Tool

Prepared data collection tools were submitted to ten experts for validation, along with the statement of the problem, objectives, operational definitions, blue print and criteria rating scale. Experts suggested for modifications in few of the distractions of the knowledge questionnaire. Based on the expert's suggestions and in consultation with the guide tools were modified**.**

Pre testing of the Tool

Validated tools were pretested by administering them to ten mothers to assess clarity of items and time required to complete the tools. Appropriate responses were evident for all the items and the subjects have taken 50-60 minutes to complete the tools.

Establishing Reliability of the Tool

Reliability of the tool was tested by the internal consistency method by using Split-half-technique for knowledge and attitude questionnaires and the Cronbach's alpha values were 0.92 and 0.74 respectively. For the observational checklist test-retest method was used for stability, and the Cronbach's alpha value was 0.78. Hence the tools were found to be feasible.

Development of Self-Instructional-Module (SIM)

SIM was prepared based on review of research, non-research literature, and discussions with experts and consultation with the guide and also personal experiences of the investigator

The steps involved in the development of SIM are,

- Preparation of the first draft of SIM
- Development of criteria checklist
- Content validation of SIM
- Preparation of final draft of the SIM
- Translation of the SIM to Kannada Language

Preparation of the first draft of SIM

The first draft of the SIM on Growth and development of under-five children was prepared based on literature review, suggestions from experts and in consultation with the guide along with the general and specific objectives.

Development of Criteria Check List

A criteria check list was developed for validation of the SIM. Criteria adopted for validation were grouped under the headings like, formulation of objectives, selection of content, and organization of content, diagrams/pictures/illustrations, and feasibility/practicability. The opinions were solicited in the form of agree, disagree and remarks

Content Validation of the SIM

Prepared SIM along with criteria check list was submitted to ten experts, 05 nursing and 04paediatricians, and 01 statistician for validation. 100% agreement was found in all the areas of the SIM.

Preparation of final draft of the SIM

The final draft of the SIM was prepared based on expert's suggestions and under the guidance of the research guide, and grouped under 05 units

Unit I: Meaning and factors influencing growth and development

Unit II: Various domains and pattern of growth and development of under- five children

Unit III: Role of nutrition and play in growth and development

Unit IV: Anticipatory guidance

Unit V: Child rearing practices

Translation of the SIM

The SIM which was in English language was translated to Kannada and later validated by the language expert.

PILOT STUDY:

Pilot study was conducted with 30 samples (15 experimental and 15 control), from Jan-Mar 2012, at Devarayasamudra and Keeluholali villages.

The investigator obtained formal written permission from the concerned authorities. Informed consent was obtained from the participants by assuring the confidentiality.

The data was collected from participants both in the experimental and control group by using knowledge and attitude questionnaire and practices were assessed by using observation checklist. Height and weight of the under-five children were measured and developmental assessment was done by using DDST-II.

SIM on growth and development of children was given to mothers of the experimental group.

Post test on knowledge, attitude and practice of mothers were assessed by using the same questionnaires after 8-10 days. Self-rating scale was administered to the mothers from the experimental group. Height and weight and developmental assessment of the under-five children were assessed after 3 months.

The collected data was analyzed by using descriptive and inferential statistics. Results showed that tools were feasible and practicable in terms of achievement of objectives.

DATA COLLECTION PROCEDURE

Data was collected from May-Dec 2012, in selected setting.

Data was collected in the following stages:

Stage 1: Formal permission was obtained from the Medical Officer of the PHC.

Stage 2: subjects were selected as per the inclusion criteria and were allotted to the Experimental and Control groups by using purposive sampling technique. Written consent was taken from the participants to participate in the study

Stage 3: Pre test was conducted for both Experimental and Control groups by using structured interview schedule on knowledge, attitude and observation checklist for practices

Knowledge and attitude questionnaires took about 45 minutes; practice was assessed by using observational check list.

Height and weight of the under- fivechildren were measured and developmental assessment was done by using **Modified Denver Developmental Screening Test II: Critical Milestones from 2 months to 5 years.**

Height and weight was compared with **WHO Standard growth Charts for Height-for-Age, and Weight-for-Age.**

Stage 4: Self-Instructional Module on growth and development of under-five children was given to the mothers of the experimental group.

Stage 5: Post test was conducted after 8-10 days by using the same questionnaires for both Experimental and Control groups. Reassessment of the height and weight and development of the under-five children was done after 3 months.

Stage 6: Mothers' opinion regarding self-Instructional Module was taken from the mothers of the Experimental group by using Self rating Scale (03 points) at the time of the post test. Researcher could collect data from 4-5 mothers per day.

PLAN FOR DATA ANALYSIS

The data obtained was analyzed by using both descriptive and inferential statistics based on objectives and hypotheses of the study. Frequencies and percentages were used to present the data. Independent't' test was done to check significant change between the Experimental and the Control group. Paired 't' test was conducted to assess the improvement in knowledge level, attitude and practice before and after intervention. Chi-square test was used to find the association between the knowledge, attitude, practice of mothers and growth and development of under-five children and demographic variables.

ETHICAL CONSIDERATION

This study was carried out by following all the ethical principles. Formal permission was obtained from the Medical Officer of the PHC. Written consent was obtained from the subjects and reassurance of confidentiality of information was given to the subjects.

This chapter has dealt with research approach, design, setting, sample and sampling technique, tools used for data collection, process of development and description of SIM, procedure of data collection and plan for data analysis.

CHAPTER IV

ANALYSIS AND INTERPRETATION

RESULTS

This chapter presents the results of Quasi-experimental study, which was undertaken to analyze the effect of SIM on the knowledge, attitude, and practiceregarding growth and development of under-five children among 300 mothers of under-five children in Guttahalli and Keeluholali villages in the jurisdiction of Devarayasamudra PHC of Kolar District, Karnataka

Organization of Findings

Data Analysis was done by using descriptive and inferential statistics and the findings are grouped under the following sections.

Section I: Concerned with the Demographic data of the mothers of under-five children and under five children

1. Distribution of Mothers according to their Socio demographic Characteristics
2. Distribution of under five children according to their Socio demographic Characteristics

Section II: Concerned with the data related to the first objective of the study, to assess and compare the Knowledge, Attitude and Practice of mothers regarding Growth and Development of under-five children before and after intervention.

1. Distribution of mothers of both experimental and control group, according to the level of Knowledge, Attitude and Practice before and after intervention
2. Comparison of Knowledge, Attitude and Practice of Mothers in the Experimental Group, before and after intervention
3. Comparison of Knowledge, Attitude and Practice of mothers in the Control group before and after intervention
4. Comparison of Knowledge, Attitude and Practices of mothers between Experimental and Control group before and after intervention

Section III: Concerned with the data related to the second objective of the study, to assess and compare the pattern of Growth and Development of under-five children before and after intervention

1. Distribution of under-five children of both Experimental and Control group according to their Growth and Development ,before and after intervention
2. Comparison of Growth of under five children before and after intervention, in both experimental and control group
3. Comparison of Growth of under five children, between Experimental and Control group, before and after intervention

Section IV: Concerned with the data related to the third objective of the study, to find out the association between Socio-demographic variables of mothers with their Knowledge, Attitude, and Practice regarding Growth and Development of under-five children

1. Association between demographic variables and post test scores of Knowledge of mothers in the experimental and control group
2. Association between demographic variables and post test scores of Attitude of mothers in the experimental and control group
3. Association between demographic variables and post test scores of Practice of mothers in the experimental and control group

Section V: Concerned with the data related to the fourth objective of the study, to find out the association between Growth and Development of under-five children and Knowledge, Attitude, and Practice of their mothers

1. Association between post test scores of knowledge of mothers and Growth and Development of under-five children in the Experimental and Control group
2. Association between post test scores of Attitude of mothers and Growth and Development of under-five children in the Experimental and Control group
3. Association between post test scores of Practice of mothers and Growth and Development of under-five children in the Experimental and Control group

Section I: Demographic Characteristics of the Samples

Table 1: Distribution of Mothers of Experimental and Control group according to their Socio Demographic Characteristics

N=300

Sl No	Variable	Experimental group (n_1=150)		Control Group (n_2=150)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	**Age in yrs**				
	a. <18	8	5.3	-	-
	b. 18-27	**120**	**80.0**	**110**	**73.3**
	c. 28-37	22	14.7	37	24.7
	d. 38 and above	-	-	3	2.0
2.	**Education**				
	a. Graduate	3	2.0	1	0.7
	b. PUC	32	21.3	11	7.3
	c. High School	**66**	**44.0**	**63**	**42.0**
	d. Higher Primary	28	18.7	59	39.3
	e. Primary	21	14.0	16	10.7
3.	**Occupation**				
	a. Govt. employee	1	0.7	1	0.7
	b. Private employee	2	1.3	1	0.7
	c. House wife	**147**	**98.0**	**148**	**98.7**
4.	**Family Income in Rs/month**				
	a. <3,500/-	**81**	**54.0**	50	33.3
	b. 3.501 -4,500	23	15.3	**65**	**43.3**
	c. 4,501-5,500	22	14.7	23	15.3
	d. >5,501	24	16.0	12	8.0
5.	**Type of Family**				
	a. Nuclear family	**104**	**69.3**	**99**	**66.0**
	b. Joint family	34	22.7	44	29.3
	c. Extended family	12	8.0	7	4.7
6.	**Religion**				
	a. Hindu	**128**	**85.3**	**138**	**92.0**
	b. Muslim	21	14.0	12	8.0
	c. Christian	1	0.7	-	-
7.	**Total No. of Children**				
	a. One	48	32.0	8	5.3
	b. Two	**71**	**47.3**	**100**	**66.7**
	c. >two	31	20.7	42	28.0
8.	**Source of information**				
	a. Television/radio	11	7.3	12	8.0
	b. News paper/magazine	17	11.3	2	1.3
	c.Friends/family members	**93**	**62.0**	**127**	**84.7**
	d.Health professionals	29	19.3	9	6.0

Table 1 shows that **5.3%** of mothers in the experimental group and none in the control group were in the age group of below 18 years. The majority (**80%)** of mothers was in the age group of 18-27 years in the experimental group, and the majority (**73.3%)** of mothers in

the control group belonged to the age group of 18-27 years.**14.7%** of mothers in the experimental group and **24.7%** of mothers in the control group were in the age group of 28-37 years. None in the experimental group and **2.0%** of mothers in the control group were in the age group of 38 years and above.

Regarding the education, Only**2%** of mothers in the experimental group and **0.7%** in the control group had graduate level of education. **21.3%** of mothers in the experimental group and **7.3%** of mothers in the control group had pre-university level of education. Majority (**44%**) of the mothers in the experimental group and in the control group (**42%)** had high school education.**18.7%** of mothers in the experimental group and **39.3%** 0f mothers in the control group had higher primary level of education. **14%** of mothers in the experimental group and **10.7%** of mothers in the control group had primary level of education.

Regarding the occupation of the mothers, only **0.7%** of mothers in both the groups were Government employees. **1.3%** of mothers in the experimental group and **0.7%** of mothers in the control group were private employees. Majority (**98%)** of mothers in the experimental group and **98.7**% of mothers in the control group were house wives.

With regard to the family income, **54**%of the mothers in the experimental group and **33.3%** of mothers in the control group had a family income of below Rs3, 500/- per month. **15.3%** of mothers in the experimental group and **43.3**% of mothers in the control group had family income of Rs. 3.501 -4,500 /- per month. **14.7%** of mothers in the experimental group and **15.3%** of mothers in the control group had family income of Rs. 4,501-5,500/- per month. **16%** of mothers in the experimental group and **8%** of mothers in the control group had family income of more than Rs. 5,501/- per month.

Regarding the type of family, the majority (**69.3**%)of mothers in the experimental group and **66%** in the control groupbelongs to nuclear family. **22.7%** of mothers in the experimental group and **29.3%** of mothers in the control group were living the joint family. Only **08%** in the experimental group and **4.7%** in the control group were living in the extended family.

With regard to the Religion, the majority (**85.3%)**of mothers in both experimental, and control group (**92.0**%) belongs to Hindu religion. **14%** of mothers in the experimental group and **8%** of mothers in the control group belongs to Muslim religion. **0.7%** of mothers in the experimental group and none in the control group belong to Christianity religion.

Regarding the number of children, **32%** in the experimental group and only **5.3%** of mothers in the control group had one child. Majority of mothers in both the experimental (**47.3**%) and control group (**66.7**%) had two children. **20.7%** of mothers in the experimental group and **28%** of mothers in the control group had more than two children.

Regarding Source of information, **7.3%** of mothers in the experimental group and **8.0%** of mothers in the control group had Television/Radio as the source of information. **11.3%** of mothers in the experimental group and **1.3%** of mothers in the control group responded News paper/magazine as the source of information. Majority of mothers in both the experimental (**62.0**%) and control group (**84.7**%) had friends and family members as the source of information. **19.3%** in the experimental group and only **6%** in the control group had health professionals as the source of information.

Table 2: Distribution of under five children of Experimental and Control group according to their Socio Demographic Characteristics

N=300

Sl No	Variable	Experimental group (n_1=150)		Control Group (n_2=150)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	**Child's age at the time of data collection**				
	a. Birth – 1 year	30	20	40	26.7
	b. 1 yr 1 mon- 2 yrs	20	13.3	10	6.7
	c. 2yrs 1mon- 3yrs	20	13.3	**60**	**40**
	d. 3yrs 1mon- 4yrs	30	20	20	13.3
	e. 4yrs 1mon-5yrs	**50**	**33.3**	20	13.3
2.	**Sex of the child**				
	a. Male	85	56.7	81	54.0
	b. female	65	43.3	69	46.0

Table 2 indicates that**20%** in the experimental group and **26.7%** in the control group were infants. **13.3%** of children in the experimental group and **6.7%** of children in the control group were in the age group of 1 year 1 month to 2 years. **13.3%** of children in the experimental group and majority (**40%)**of children in the control group were in the age group of 2yrs 1month to 3 years. **20%** of children in the experimental group and **13.3%** of children in the control group were in the age group of 3 years 1 month to 4 years. Majority**(33.3%)** of children in the experimental group and **13.3%** of children in the control group were in the age group of 4yrs 1month to 5 years.

Regarding gender, in the experimental group **56.7%** were male children and **43.3%** were female children. In the control group **54%**were male and **46%** were female children

Section II: Analysis of Pre test and Post test scores in the Experimental and Control groups on Knowledge, Attitude and Practice of mothers regarding Growth and Development of under-five children

Table 3: Distribution of mothers of Experimental and Control group, according to the level of Knowledge, Attitude and Practicebefore and after intervention

N=300

Variable	Total Score	Levels	Experimental group(n_1=150)				Control group(n_2=150)			
			Before		After		Before		After	
			No	%	No	%	No	%	No	%
Knowledge	70	Poor (<50%)	**147**	**98**	-	-	**147**	**98**	**138**	**92.0**
		Average (50-75%)	02	1.3	02	1.3	02	1.3	10	6.7
		Good (>75%)	01	0.7	**148**	**98.7**	01	0.7	02	1.3
Attitude	150	Unfavorable (<50%)	01	0.7	01	0.7	03	2	02	1.3
		Favorable (50-75%)	**148**	**98.6**	08	5.3	**147**	**98**	**146**	**97.4**
		Most favorable(>75%)	01	0.7	**141**	**94**	-	-	**02**	**1.3**
Practice	68	Poor (<50%)	**147**	**98**	-	-	**118**	**78.7**	**112**	**74.7**
		Average (50-75%)	02	1.3	02	1.3	32	21.3	38	25.3
		Adequate (>75%)	**01**	**0.7**	**148**	**98.7**	**-**	**-**	**-**	**-**

Table 3 shows that with regard to the Knowledgeout of 300 mothers (Experimental-150, & Control-150),**98%** of mothers both in the experimental and control group had poor knowledge, **1.3%** in the experimental group and control group had average knowledge, and **0.7%** in the experimental group and **02%** in the control group had good knowledge before intervention, regarding growth and development of under-five children. Whereas, after intervention, majority (98.7**%**) of mothers in the experimental group and only **1.3%** in the control group showed good knowledge, **1.3%** in the experimental and **6.7%** in the control group showed average level of knowledge, **none** in the experimental and **92%** of mothers in the control group remained at the same level of poor knowledge. **(Figure- 3)**

With regard to the Attitudeout of 300 mothers (Experimental-150, & Control-150), **0.7%** in the experimental and **2%** in the control group showed unfavorable attitude, **98.7%** of the mothers in the experimental group and **98%** of mothers in the control group had favorable attitude and **0.7%** in the experimental and **none** of the mothers in the control group had most favorable attitude, before intervention. Whereas, after intervention,**94%** of mothers in the experimental group and only **1.3%** in the control group showed most favorable attitude, **5.3%** in the experimental group and **98%** in the control group showed favorable attitude and **0.7%** in the experimental and **1.3%** in the control group showed unfavorable attitude **(Figure- 4)**

With regard to the Practice, out of 300 mothers (Experimental-150, & Control-150), **98%** of mothers in the experimental group and **78.7%** of mothers in the control group had poor practice, **1.3%** in the experimental group and **21.3%** in the control group had average level of practice and **0.7%** in the experimental group and **none** in the control group had adequate practice regarding Growth and Development of under-five children before intervention. Whereas, after intervention, majority **(98.7%)** of mothers in the experimental group and **none**in the control group showed adequate practice, **1.3%** in the experimental group and **25.3%** in the control group showed average level of practice and **none** in the experimental group **74.7%** in the control group and showed poor practice. **(Figure-5)**

This indicated that SIM on Growth and Development of under- five children was effective in improving the Knowledge, attitude, and Practice of mothers. **Hence the statedH_1 is accepted**

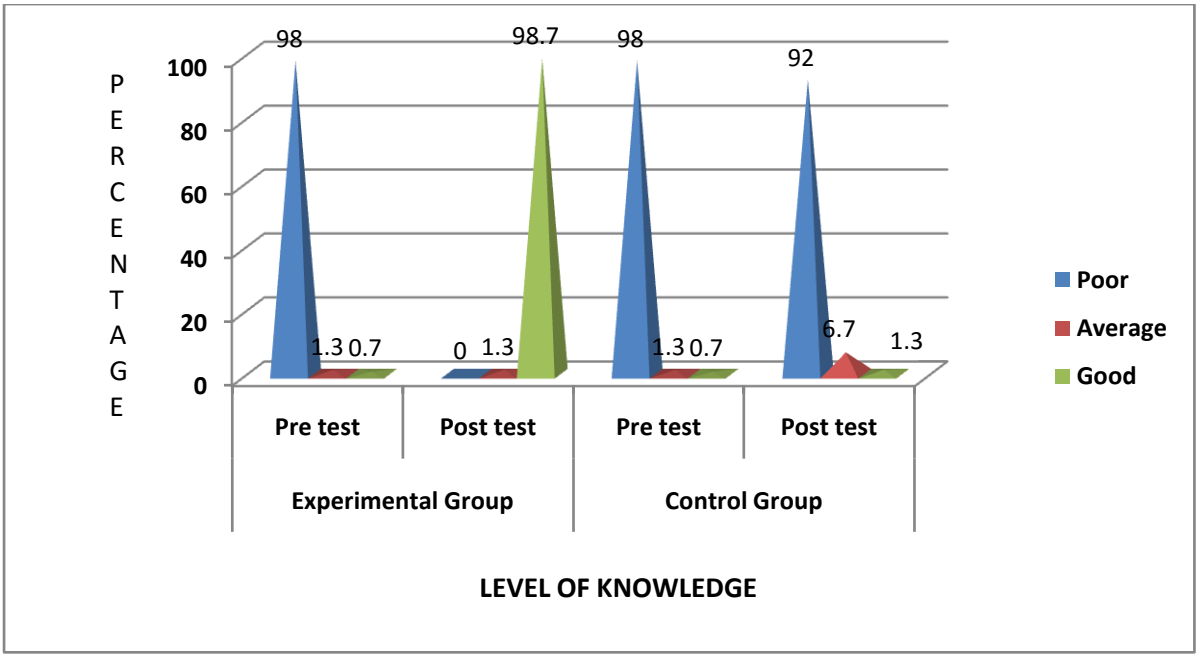

Figure 3: Distribution of Mothers of Experimental and Control group according to their level of Knowledge before and after theintervention

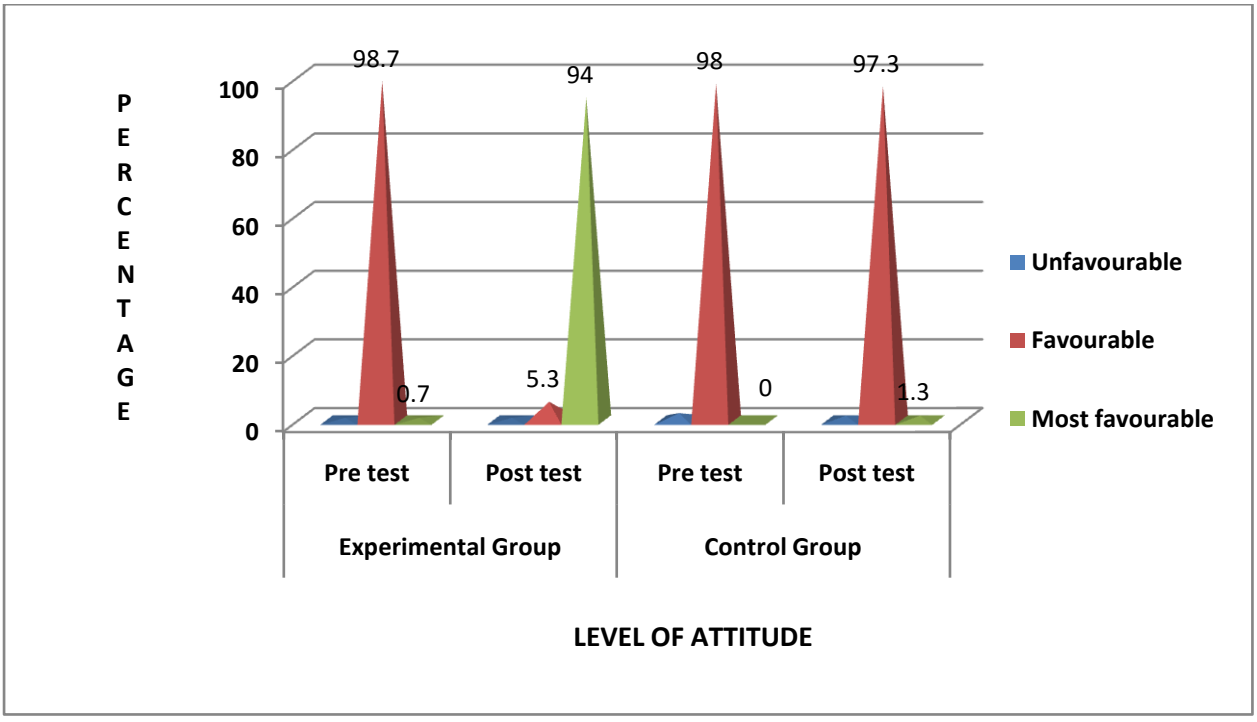

Figure 4: Distribution of Mothersof Experimental and Control group according to their level of Attitude before and after the intervention

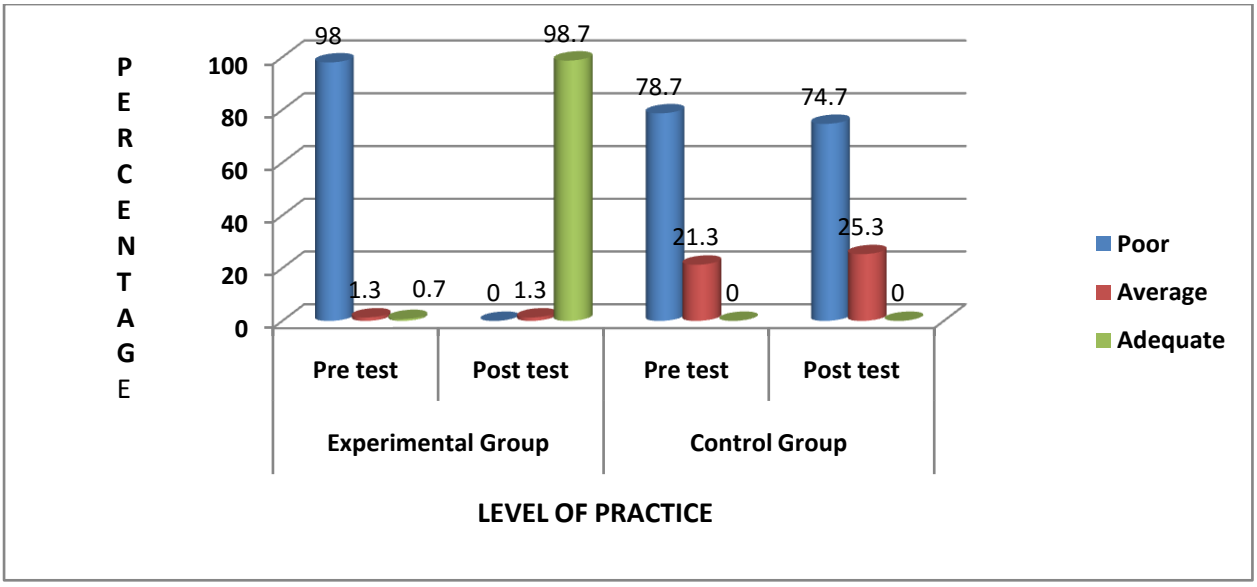

Figure 5 : Distribution of Mothers of Experimental and Control group according to theirlevel of Practice before and after Intervention

Table 4: Comparison of Mean Knowledge, Attitude and Practice Scores of Mothers in the Experimentalgroup before and after intervention

n_1=150

Variable	Max. Score		Mean	S.D	Paired 't' value	'p' value	Inference
Knowledge	70	Before	9.68	5.418	-100.36	0.000	SS
		After	60.11	3.071			
Attitude	150	Before	87.40	7.908	-45.07	0.000	SS
		After	123.56	7.120			
Practice	68	Before	27.21	2.531	-91.251	0.000	SS
		After	55.82	2.968			

't' $_{149}$value- 1.9760 SS-Statistically significant

Table 4 shows that after intervention, the mean knowledge, attitude, and practice scores of mothers of the experimental group**(60.11, 123.56 and 55.82** respectively) were higher than before intervention mean knowledge, attitude and practice scores (**9.68, 87.40 and 27.21** respectively). Computed paired't' test revealed that, the calculated't' value (**t_{149}=100.36, 45.07 and 91.251**) for knowledge, attitude and practice were more than the table value (**t_{149}=1.976**) at 0.05 level of significance. **Hence the stated H_1 is accepted**

Thus it can be inferred that Self -Instructional –Module on growth and development of under-five children was effective in improving the knowledge, attitude, and practice of mothers of under five children.

Table 5: Comparison of Knowledge, Attitude and Practice of mothers in the Control group before and after intervention

n_2=150

Variable		Mean	S.D	Paired 't' value	'p' value	Inference
Knowledge	Before	21.00	3.910	27.071	0.000	SS
	After	30.75	2.890			
Attitude	Before	91.90	7.956	0.020	0.984	NS
	After	91.98	11.230			
Practice	Before	27.60	4.306	1.708	0.748	NS
	After	28.60	4.954			

't' $_{149}$value- 1.9760 SS-Statistically significantNS-Not Significant

Table 5 shows that the mean post test Knowledge, Attitude, and Practice scores (**30.75, 91.98, and 28.60** respectively) were slightly higher than the mean pre testKnowledge, Attitude and Practice scores (**21.00, 91.90, 27.60**, respectively). Further, the computed paired't' test revealed that, the calculated't' values (t_{149}**= 0.020 and 1.708** respectively)for attitude and practice scores of mothers from the control group, were lesser than the table value (**t_{149}=1.976**) at 0.05 level of significance. Whereas, for knowledge, the calculated't' values (**t_{149}= 27.071**) was more than the table value (**t_{149}=1.976**) at 0.05 level of significance. This might be due to the influence of the pre test, which would have made mothers to become curious about the correct information.

Thus it can be inferred that Self -Instructional -Module on Growth and Development of under-five children was effective in improving the Knowledge, Attitude, and Practice of mothers of the Experimental group.

Table 6: Comparison of Knowledge, Attitude and Practices of mothers between Experimental and Control group before and after intervention

N=300

Variables		Experimental group(n_1=150)		Control group(n_2=150)		Independent 't' value	'p' Value	Inference
		Mean	SD	Mean	SD			
Knowledge	Before	22.20	7.876	21.00	3.910	1.145	0.364	NS
	After	60.11	3.071	30.73	2.801	**86.567**	**0.000**	**SS**
Attitude	Before	94.67	7.613	94.93	7.363	0.665	0.213	NS
	After	123.56	7.120	91.89	11.230	**30.927**	**0.000**	**SS**
Practice	Before	29.27	4.301	27.60	4.306	1.052	0.450	NS
	After	55.82	2.968	30.47	4.190	**64.177**	**0.000**	**SS**

t_{248}=1.900,SS-Statistically Significant, NS-Not Significant

Table 6 shows that beforethe intervention, there was no much difference between before intervention mean knowledge, attitude, and practice scores **(22.20, 94.67,**

29.27respectively)of mothers in the Experimental group and Control group (**21.00, 94.93, 27.60** respectively). Computed Independent't' test also revealed that the calculated't' values (**t_{248}=1.145, 0.665, 1.052** respectively) were lesserthan the table values (**t_{248}=1.900**) at 0.05 level of significance.

Whereas, after the intervention the mean scores of knowledge, attitude, and practice (**60.11, 123.56, 55.82** respectively)of mothers in the experimental group were greater than after intervention mean scores of knowledge, attitude and practice (**30.73, 91.89, 30.47** respectively) ofmothers in the control group. Computed Independent't' test revealed that the calculated't' values(**t_{248}=86.567,30.927,64.177**respectively) were higher than the table values(**t_{248}=1.900**) at 0.05 level of significance.**Hence the stated H_1 is accepted.**

Thus, it can be inferred that Self -Instructional –Module on growth and development of under-five children was effective in improving the knowledge, attitude, and practice of mothers of under- five children in the experimental group.

Section III : Comparison of Growth and Development and Developmental Pattern of Under- five children in the Experimental and Control group

Table 7: Distribution of Under-five children of Experimental and Control group according to their Growth and Development before and after intervention

N=300

Variable	Pattern of Growth & Development	Experimental group(n_1=150)				Control group(n_2=150)			
		Before		After		Before		After	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
Height for age	Normal	47	31.3	**117**	**78.0**	49	32.7	54	36.0
	Stunted	**82**	**54.7**	33	22.0	**63**	**42.0**	**65**	**43.3**
	Severely Stunted	21	14.0	-	-	38	25.3	31	20.7
Weight For age	Normal	48	32.0	**131**	**87.3**	**76**	**50.7**	**77**	**51.3**
	underweight	**74**	**49.3**	16	10.7	46	30.7	46	30.7
	Severely underweight	28	18.7	3	2.0	28	18.7	27	18.0
Development	Acceptable	**150**	**100**	**150**	**100**	**146**	**97.3**	**146**	**97.3**
	Delayed	-	-	-	-	04	2.7	04	2.7

Table 7 indicates that out of 300 (Experimental group-150, & Control group-150) under five children,before the intervention,**31.3%** in the experimental group and **32.7%** in the control group had normal height-for-age, **54.7%** in the experimental group and **42%** in

the control group, had stunted height-for-age, **14%** of children in the experimental group and**25.3%** in the control group had severely stunted height- for- age. Whereas, after intervention,**78%** of the children in the experimental group and **36%** in the control group attained normal height-for-age, **22%** in the experimental group and **43.3%** in the control group remained as stunted height- for –age, and**none** in the experimental group, 20.7**%** in the control group showed severely stunted height-for-age**. (Figure-6)**

With regard to weight-for age, out of 300(Experimental group-150, & Control group-150) under five children, before intervention,**32%** in the experimental group and **50.7%** in the control group had normal weight-for-age, **49.3%** of children in the experimental group and **30.7%** of children in the control group had underweight -for –age, and**18.7%** each in both experimental and control group had severely underweight –for-age and. Whereas, after intervention majority(**87.3%**) of children in the experimental group and only **51.3%** in the control group had normal weight-for-age, **10.7%** in the experimental group and **30.7%** in the control group showed underweight for-age and only **2%** in the experimental group and **18%** in the control group showed severely underweight for age. **(Figure-7)**

Further, the score of developmental pattern of under-five childrenremained same before and after intervention (**100%**) in the acceptable range of development in the experimental group. Whereas in the control group, **2.7%** of under-five children were in the range of delayed development after the intervention.**(Figure-8)Hence the stated H_2 is accepted**

Thus, it can be inferred that Self -Instructional –Module on growth and development of under-five children was effective in improving the knowledge, attitude, and practice of mothers of under five children in the Experimental group which has in turn improved Growth and Development of under-five children in the Experimental group

The table also indicates that there was a slight increase in the post test percentage of under-five children attaining normal height-for-age and weight-for-age in the control group as well, might be due to the influence of pre-test, which might have motivated mothers to pay more attention towards growth and development of their under-five children.

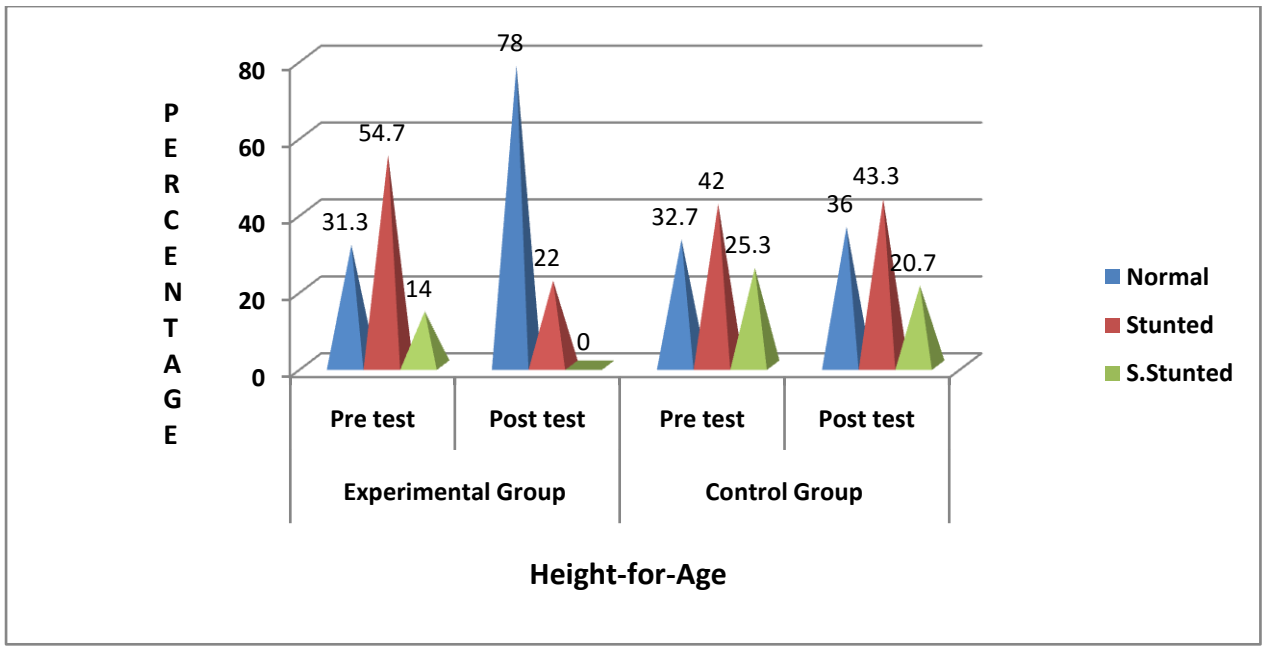

Figure 6: Distribution of Under-five childrenof Experimental and Control group according to their level of Height before and after intervention

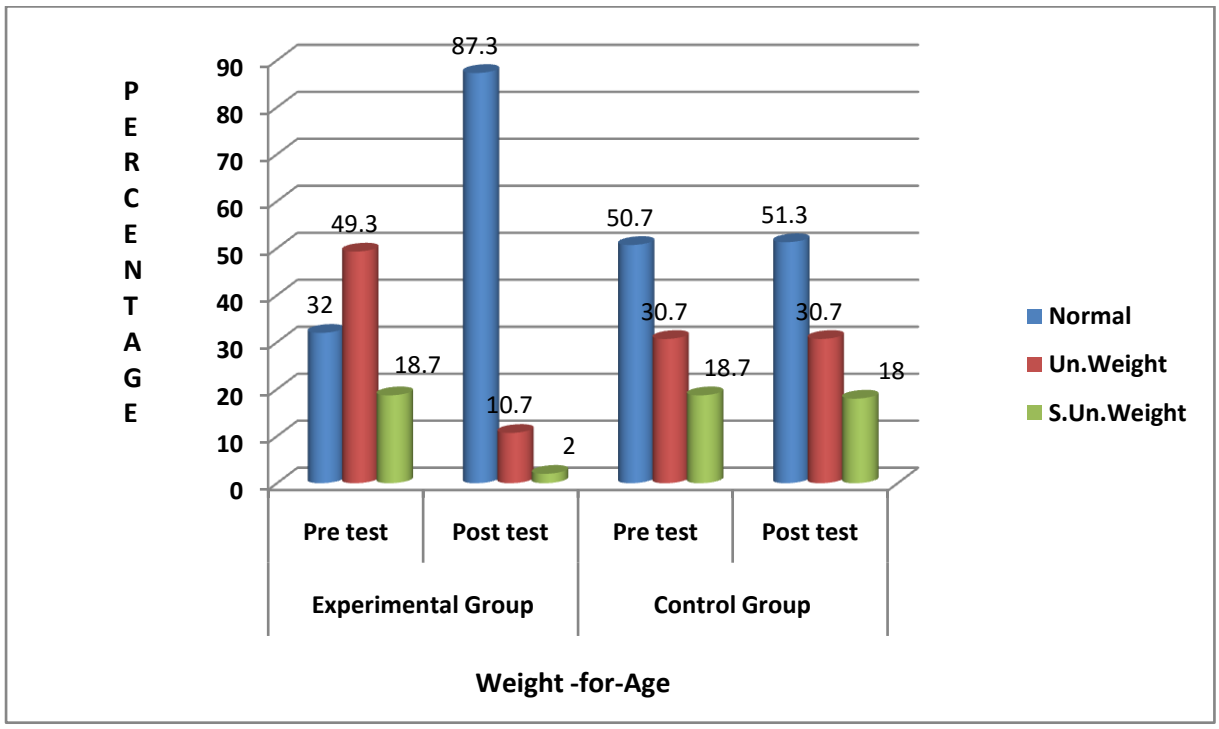

Figure 7: Distribution of Under-five children of Experimental and Control group according to their level of Weight before and after intervention

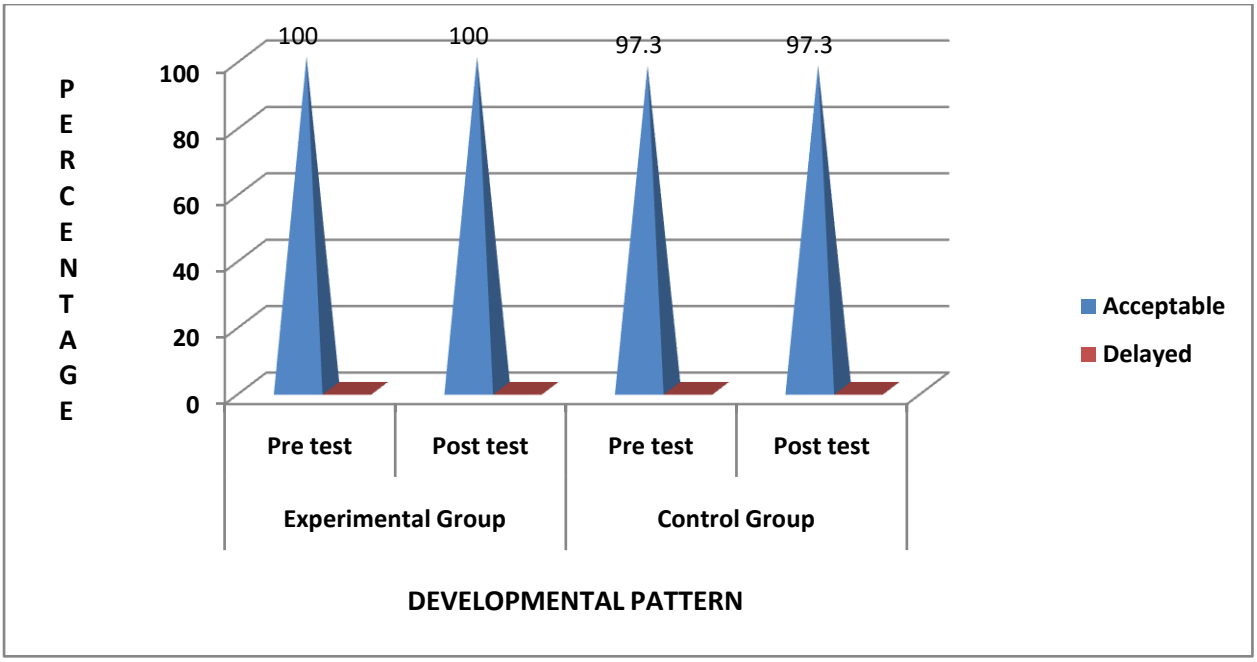

Figure 8 : Distribution of Underfive Childrenof Experimental and Control group according to their level of Development before and after intervention

Table 8: Comparison of Growth pattern of under five children before and after intervention in Experimental and Control group
N=300

Variable	Age group		Experimental group (n_1=150)			Control group (n_2=150)		
			Mean	S.D	Paired 't' value	Mean	S.D	Paired 't' value
Height-for-age	Birth-1 yr (Infant)	Before	59.67	5.508	**5.091***	58.50	6.455	1.970
		After	78.33	2.887	**29df**	60.00	5.967	39df
					'p'-0.036			'p'-0.325
	1yr 1 mon-3yrs (Toddler)	Before	57.25	14.500	**8.359***	58.57	12.003	1.741
		After	76.25	17.500	**39df**	61.57	11.802	69df
					'p'-0.004			'p'-0.129
	3yrs 1mon-5yrs (Pre-school)	Before	92.25	3.576	**12.13***	91.40	2.776	1.456
		After	112.88	4.824	**79df**	90.00	4.690	39df
					'p'-0.000			'p'-0.139
Weight-for-age	Birth-1 yr (Infant)	Before	8.33	1.528	**4.145***	7.725	0.984	1.333
		After	10.33	1.174	**29df**	6.650	1.075	39df
					'p'-0.010			'p'-0.650
	1yr 1 mon-3yrs (Toddler)	Before	9.75	2.630	**5.745***	9.857	2.471	1.158
		After	11.125	2.174	**39df**	10.78	2.118	69df
					'p'-0.010			'p'-0.436
	3yrs 1mon-5yrs (Pre-school)	Before	12.75	2.121	**7.937***	13.87	3.986	1.951
		After	20.25	1.909	**79df**	15.90	4.666	39df
					'p'-0.000			'p'-0.435

't'$_{29}$-2.0452, 't'$_{39}$-2.0227, 't'$_{79}$-1.9904 & 't'$_{69}$-1.9950, *-significant at 0.05 level

Table 8 showed that after intervention, the mean scores of Height-for-age of Infant, Toddler and Pre-schooler (**78.33, 76.25, and 112.88** respectively) were higher than before intervention mean scores of Height-for-age(**59.67, 57.25, 92.25** respectively) of all the age groupsin the experimental group. Computed paired't' test revealed that, the calculated't' values (**5.091, 8.359, 12.13 respectively)** were more than the table values at 0.05 level of significance. Whereas, in the control group, after intervention mean scores of Height-for-age (**60.00, 61.57, 90.00** respectively) were slightly greater than before intervention mean scores(**58.50, 58.57, 91.40** respectively) of Height-for-age of all the age groups, but Computed paired 't' test revealed that , the calculated 't' values (**1.970, 1.741, 1.456** respectively) were smaller than the table values at 0.05 level of significance.

Further, in the experimental group, after intervention mean scores of Infant, Toddler and Pre schooler (**10.33, 11.125, 20.25** respectively) of weight -for-age were greater than before intervention mean scores(**8.33, 9.75, 12.75** respectively) of weight-for-age of all the age groups. Computed paired 't' test revealed that , the calculated 't' values (**4.145, 5.745,7.937 respectively)**were greater than the table values at 0.05, level of significance. Whereas, in the control group, after the intervention mean scores of weight -for-age (**6.650, 10.78, 15.90** respectively) were slightly greater than before intervention mean scores (**7.725, 9.857, 13.87** respectively) of weight -for-age of all the age groups. But Computed paired 't' test revealed that , the calculated 't' values(**1.333, 1.158, 1.951** respectively) were smaller than the table values at 0.05 level of significance for all the age groups. **Hence the statedH_2 is accepted**.

Thus, Self -Instructional –Module on growth and development of under-five children was effective in improving the knowledge, attitude and practice of mothers of under five children in the experimental group, which has influenced improvementin the growth and development of under five children of the experimental group

Table 9: Comparison of Growth of under five children between Experimental and contrlgroup before and after intervention

N=300

Variable	Age group		Experimental group (n_1=150)		Control group (n_2=150)		Df	Independent 't' value
			Mean	**S.D**	**Mean**	**S.D**		
Height-for-age	Birth-1 yr (Infant)	Before	59.67	5.508	58.50	6.455	68	0.824 'p'-0.264
		After	78.33	2.887	60.00	5.967		**2.640*** 'p'-0.002
	1yr 1 mon-3yrs (Toddler)	Before	57.25	14.500	58.57	12.003	108	1.408 'p'-0.132
		After	76.25	17.500	61.57	11.802		**2.878* 'p'-0.021**
	3yrs 1mon-5yrs (Pre-school)	Before	92.25	3.576	91.40	2.776	118	1.387 'p'-0.350
		After	112.88	4.824	90.00	4.690		**5.760* 'p'-0.001**
Weight-for-age	Birth-1 yr (Infant)	Before	8.33	1.528	7.725	0.984	68	1.775 'p'-0.213
		After	10.33	1.174	6.650	1.075		**3.780* 'p'-0.002**
	1yr 1 mon-3yrs (Toddler)	Before	9.75	2.630	9.857	2.471	108	0.068 'p'-0.321
		After	11.125	2.174	10.78	2.118		**2.253*** 'p'-0.010
	3yrs 1mon-5yrs (Pre-school)	Before	12.75	2.121	13.87	3.986	118	1.233 'p'-0.264
		After	20.25	1.909	15.90	4.666		**2.894*** 'p'-0.014

't'$_{68}$-1.995, 't'$_{108}$-1.982, & 't'$_{118}$-1.980, *-significant at 0.05 level

The data in the table 9 indicates that before intervention, the mean scores of height-for age**(59.67, 57.25, 92.25** respectively) and weight for age (**8.33, 9.75, 12.75** respectively) of all the age group of children in the experimental group were slightly different from before intervention mean height-for age (**58.50, 58.57, 91.40** respectively) and weight for age (**7.725, 9.857, 13.87** respectively) of the control group. Computed Independent 't' test revealed that, the calculated 't' values (**0.824, 1.408, 1.387**, respectively) for height-for-age and weight-for-age (**1.775, 0.068, 1.233**, respectively) of all the age groups were smaller

than the table values at 0.05 level of significance, indicating that no significant difference in the before intervention scores of both groups.

Further, after intervention mean scores of height-for age(**78.33, 76.25, and 112.88** respectively) and weight for age (**10.33, 11.125, 20.25** respectively) of all the age group of children in the experimental group were greater than after intervention mean scores of height-for age(**60.00, 61.57, 90.00** respectively) and weight for age (**6.650, 10.78, 15.90** respectively) of the control group. Computed Independent't' test revealed that, the calculated 't' values(**2.640, 2.878, 5.760 respectively)** for height-for-age and weight-for-age (**3.780, 2.253, 2.894 respectively)** of all the age groups were greater than the table values at 0.05 level of significance indicating a significant difference in the after intervention scores of both groups. **Hence statedH_2 is accepted.**

Thus, Self -Instructional –Module on growth and development of under-five children was effective in improving the knowledge, attitude and practice of mothers of under five children in the experimental group, which has influenced the improvementin the growth and development of under five children of the experimental group

Section I V: Association between Demographic Variables and Post test Scores of Knowledge, Attitude and Practice of mothers in the Experimental and Control group

Table 10: Association between Socio Demographic variables and Post test Knowledge Scores of mothers in the Experimental and Control group
N=300

Variables	Experimental Group (n_1=150)				Control Group (n_2=150)			
	Knowledge scores				Knowledge scores			
	Poor	Average	Good	'p' Value	Poor	Average	Good	'p' Value
	No	No	No		No	No	No	
1.Age in yrs				X^2=0.348			-	X^2=1.522
a.<18-27	-	2	126	'p'=0.555	101	**9**	-	'p'=0.932
b.28 & above	-	0	22	1df	39	**1**		1df
2.Education				X^2=0.617			-	X^2=2.096
a.Primary-high school	-	2	113	'p'=0.432	130	**8**	-	'p'=0.148
b.PUC& above	-	0	35	1df	10	**2**		1df
3. Occupation				**X^2=15.00***				X^2=0.145
a.House wife	-	2	144	**'p'=0.000**	138	**10**	-	'p'=0.704
b.working women	-	1	3	**1df**	2	**0**	-	1df
4. Family income pm				X^2=0.869				X^2=0.067
a.<3,500-4,500	-	2	104	'p'=0.648	107	**8**	-	'p'=0.796
b.4,501->5.501	-	0	44	1df	33	**2**	-	1df
5. Family				**X^2=6.921***				X^2=0.076
a.Nuclear	-	2	102	**'p'=0.031**	92	**7**	-	'p'=0.782
b.others	-	0	46	**1df**	48	**3**	-	1df
6. Religion				**X^2=6.179***				X^2=0.058
a.Hindu	-	2	126	**'p'=0.046**	129	**9**	-	'p'=0.809
b.Nonhindu	-	0	22	**1df**	11	**1**	-	1df
7.No.of children				X^2=0.954				X^2=0.462
a.one	-	0	48	'p'=0.329	7	**1**	-	'p'=0.497
b.>one	-	2	100	1df	133	**9**	-	1df
8. Source of information				**X^2=15.88***				X^2=1.500
a.Mass media	-	1	27	**'p'=0.000**	9	**0**	-	'p'=0.369
b.friends and family members	-	0	92	**2df**	13	**1**	-	2df
c.Health professionals	-	1	29		118	**9**	-	
9. Gender of the child				**X^2=15.00***				X^2=1.670
a.Female	-	2	82	**'p'=0.000**	65	**4**	-	'p'=0.459
b.Male	-	0	66	**1df**	75	**6**	-	1df

X^2 table value at 4df-9.488, 2df-5.991 & 1df-3.841, * -significant at 0.05 level

Data in table 10 indicates that there was a significant association between occupation (X^2 **=15.00, 1df**),typeof family (X^2 **=6.921, 1df**), religion (X^2 **=6.179, 1df**) source of information (X^2 **=15.800, 2df**) and gender of the child (X^2 **=15.00, 1df**) and after intervention knowledge scores of mothers in the experimental group at 0.05evel of significance. **Hence the stated H_3 is accepted**for these variables**.**

Further, the age of mothers (X^2**=0.348, 1df**), Education of mothers (X^2**=0.617, 1df**), Family income (X^2**=0.869, 1df**), number of children (X^2**=0.954, 1df**), have not demonstrated any significant association with after intervention knowledge scores of mothers in the experimental group at 0.05 level of significance. **Hence the stated$H_3$is rejected** for these variables.

Whereas, In the control group the demographic variables, Age (X^2**=1.522, 1df**), education (X^2**=2.096,1df**), Occupation (X^2**=0.145,1df**), family income (X^2**=0.067,1df**), type of family (X^2**=0.076, 1df**), religion (X^2**=0.058, 1df**), number of children (X^2**=0.462, 1df**), source of information (X^2**=1.500, 2df**), gender of the child (X^2**=1.670, 1df**), have not demonstrated any significant association with the post test scores of Knowledge of mothers, at 0.05 level of significance.

Table 11: Association between Demographic Variables and Post test Scores of Attitude of mothers in the Experimental and Control group

N=300

Variables	Experimental Group (n_1=150)				Control Group (n_2=150)			
	Attitude scores				Attitude scores			
	Un favorable	favorable	Most favorable	'p' Value	Un favorable	favorable	Most favorable	'p' Value
	No	No	No		No	No	No	
1.Age in yrs				X^2=0.881				X^2=1.494
a.<18-27	1	6	121	'p'=0.644	2	106	-	'p'=0.474
b.28 & above	0	2	20	2df	0	40	-	1df
2.Education				X^2=0.317				X^2=3.010
A.Primary-high school	1	6	108	'p'=0.853	2	135	-	'p'=0.032
b.PUC& above	0	2	33	2df	0	11	-	1df
3. Occupation				**X^2=15.00***				X^2=0.056
a. House wife	1	8	138	**'p'=0.000**	2	146	-	'p'=0.973
b. working women	0	0	3	**2df**	0	2	-	1df
4. Family income pm				X^2=0.869				X^2=1.251
a.<3,500-4,500	1	1	104	'p'=0.929	2	113	-	'p'=0.535
b.4,501->5.501	0	4	40	2df	0	35	-	1df
5. Family				X^2=0.736				X^2=3.193
a. Nuclear	1	5	99	'p'=0.947	1	98	-	'p'=0.023
b .others	0	3	42	2df	1	50	-	1df
6. Religion				**X^2=6.661***				X^2=0.357
a .Hindu	0	6	122	**'p'=0.036**	2	136	-	'p'=0.836
b .Nonhindu	1	2	19	**2df**	0	12	-	1df
7.No.of children				X^2=1.703				X^2=0.232
a. one	0	3	44	'p'=0.427	0	8	-	'p'=0.891
b.>one	1	5	97	2df	2	140	-	1df
8. Source of information								
a. Mass media	0	1	27	**X^2=15.06***	0	9	-	X^2=2.007
b. friends and family members	1	6	86	**'p'=0.000**	0	14	-	'p'=0.000
c. Health professionals	0	1	28	**4df**	2	125	-	2df
9. Gender of the child				**X^2=15.03***				X^2=2.398
a. Female	0	5	79	**'p'=0.000**	2	68	-	'p'=0.302
b. Male	1	3	62	**2df**	0	80	-	1df

X2 table value at 4df-9.488,2df-5.991 & 1df-3.841, * -significant at 0.05 level,

Data in table 11 indicates that there was a significant association between occupation (**X^2 =15.000, 2df**), religion, (**X^2 =6.661, 2df**), source of information (**X^2 =15.060, 4df**), and gender (**X^2 =15.030, 2df**), of the child and after intervention attitude scores of mothers in the experimental group at 0.05 level of significance. **Hence the stated $H_3$is accepted** for these variables.

Further, the age of mothers (**X^2=0.881, 2df**), Education of mothers (**X^2=0.317, 2df**), Family income (**X^2=0.869, 2df**), type of family, (**X^2=0.736, 2df**), number of children (**X^2=1.703, 2df**), have not demonstrated any significant association with after intervention

Attitude scores of mothers in the experimental group at 0.05 level of significance. **Hence the stated$H_3$is rejected** for these variables.

Whereas, In the control group the demographic variables, Age (**X^2=1.494, 1df**), education (**X^2=3.010,1df**), Occupation (**X^2=0.056,1df**), family income (**X^2=1.251,1df**), type of family (**X^2=3.193, 1df**), religion (**X^2=0.357, 1df**), number of children (**X^2=0.232, 1df**), source of information (**X^2=2.007, 2df**), gender of the child (**X^2=2.398, 1df**), have not demonstrated any significant association with the post test scores of Attitude of mothers, at 0.05 level of significance.

Table 12: Association between Demographic Variables and Post test Practice Scores of mothers in the Experimental and Control group

N=300

Variables	Experimental Group (n_1=150)				Control Group (n_2=150)			
	Practice scores				Practice scores			
	Poor	Average	Adequate	'p' Value	Poor	Average	Adequate	'p' Value
	No	No	No		No	No	No	
1.Age in yrs				X^2=0.351				X^2=0.44
a.<18-27	-	2	125	'p'=0.553	87	23	-	'p'=0.833
b.28 & above	-	0	22	1df	31	9	-	1df
2.Education				X^2=0.622				X^2=1.314
a.Primary-high school	-	2	112	'p'=0.430	107	31	-	'p'=0.252
b.PUC& above	-	0	35	1df	11	1	-	1df
3. Occupation				**X^2=4.739***				X^2=0.550
a.House wife	-	2	144	**'p'=0.021**	116	32	-	'p'=0.458
b.working women	-	0	3	**1df**	2	0	-	1df
4. Family income pm				X^2=0.415				X^2=0.048
a.<3,500-4,500	-	1	104	'p'=0.932	90	7	-	'p'=0.826
b.4,501->5.501	-	1	43	1df	28	25	-	1df
5. Family				X^2=0.377				X^2=0.626
a .Nuclear	-	1	103	'p'=0.539	76	23	-	'p'=0.429
b.others	-	1	44	1df	42	9	-	1df
6. Religion				**X^2=4.101***				X^2=0.104
a.Hindu	-	2	126	**'p'=0.056**	109	29	-	'p'=0.747
b.Nonhindu	-	0	21	**1df**	9	3	-	1df
7.No.of children				X^2=0.294				X^2=2.292
a.one	-	1	48	'p'=0.588	8	0	-	'p'=0.130
b.>one	-	1	100	1df	110	32	-	1df
8. Source of information				**X^2= 6.711***				X^2=4.739
a.Mass media	-	0	28	**'p'=0.031**	14	0	-	'p'=0.094
b.friends and family members	-	2	90	**2df**	98	29	-	2df
c.Health professionals	-	1	29		6	3	-	
9. Gender of the child				**X^2= 3.854***				X^2=0.139
a.Female	-	1	64	**'p'=0.056**	54	15	-	'p'=0.911
b.Male	-	1	84	**1df**	64	17	-	1df

X^2 table value at 4df-9.488, 2df-5.991 & 1df-3.841, * -significant at 0.05 level,

Data in table 12 indicates that there was a significant association between occupation (**X^2 =4.739, 1df**), , religion (**X^2 =4.101, 1df**), , source of information (**X^2 =6.711, 2df**), and gender (**X^2 =3.854, 1df**), of the child and after intervention practice scores of mothers in the experimental group at 0.05 level of significance. **Hence the stated $H_3$is accepted**for these variables

Further, the age of mothers (**X^2=0.351, 1df**), Education of mothers (**X^2=0.622, 1df**), Family income (**X^2=0.415, 1df**), type of family(**X^2=0.377, 1df**),number of children (**X^2=0.294, 1df**), have not demonstrated any significant association with after intervention

Practice scores of mothers in the experimental group at 0.05 level of significance. **Hence the stated$H_3$is rejected** for these variables.

Whereas, In the control group the demographic variables, Age (**X^2=0.44, 1df**), education (**X^2=1.314,1df**), Occupation (**X^2=0.550,1df**), family income (**X^2=0.048,1df**), type of family (**X^2=0.626, 1df**), religion (**X^2=0.104, 1df**), number of children (**X^2=2.292, 1df**), source of information (**X^2=4.739, 2df**), gender of the child (**X^2=0.139, 1df**), have not demonstrated any significant association with the post test scores of Practice of mothers, at 0.05 level of significance.

Section V: Association between post test scores of knowledge, attitude and practices of Mothers and growth and development of under-five children in the Experimental and control groups

Table 13: Association between Post test Scores of Knowledge of mothers and Growth and Development of under five children in the Experimental and Control group
N=300

Variables	Growth pattern	Experimental Group (n_1=150)				Control Group (n_2=150)			
		Knowledge scores				Knowledge scores			
		Poor	Average	Good	'p' Value	Poor	Average	Good	'p' Value
		No	No	No		No	No	No	
Height-for-age	Normal	-	1	116	**X^2=3.860* 'p'=0.042 1df**	51	**3**	-	X^2=3.780 'p'=0.435 2df
	Stunted	-	1	32		58	**7**	-	
	Severely Stunted	-	-	-		31	**0**	-	
Weight-for-age	Normal	-	2	128	**X^2=4.641* 'p'=0.020 1df**	73	**4**	-	X^2=2.614 'p'=0.650 2df
	underweight	-	0	20		25	**2**	-	
	Severely underweight	-				42	**4**	-	
Development	Acceptable	147	2	1	-	145	**1**		X^2=0.139 'p'=0.911 1df
	Delayed	-	-	-		2	**2**		

X^2 table value at 1df-3.841, 2df-5.991, * -significant at 0.05 level

Data in table 13 indicates that there was a significant association between after intervention knowledge scores of mothers of the experimental group and Height- for- age (**X^2 =3.860, 1df**), and weight- for- age (**X^2 =4.641, 1df**),of under five children at 0.05 level of significance. **Hence the stated H_4 is accepted**

In the control group, there was no significant association between post test knowledge scores of mothers and height-for-age(**X^2 =3.780, 2df**) , weight –for-age (**X^2 =2.614, 2df**) and development (**X^2 =0.139, 1df**) of under-five children, at 0.05 level of significance

Table 14: Association between Post test Scores of Attitude of mothers and Growth and Development of under- five children in the Experimental and Control group

N=300

Variables	Growth pattern	Experimental Group (n_1=150)				Control Group (n_2=150)			
		Attitude scores				Attitude scores			
		Un favorable	favorable	Most favorable	'p' Value	Un favorable	favorable	Most favorable	'p' Value
		No	No	No		No	No	No	
Height-for-age	Normal	0	6	111	**X^2=15.006* 'p'=0.000 4df**	1	52	**1**	X^2=3.716 'p'=0.446 4df
	Stunted	0	2	30		0	65	**0**	
	Severely Stunted	1	0	0		1	29	**1**	
Weight-for-age	Normal	1	7	123	**X^2=15.019* 'p'=0.000 4df**	1	74	**2**	X^2=2.533 'p'=0.639 4df
	Under weight	0	0	3		0	27	**0**	
	Severely under weight	0	1	15		1	45	**0**	
Development	Acceptable	2	146	2	-	3	143	-	X^2=0.84 'p'=0.772 1df
	Delayed	-	-	-		0	4	-	

***X^2*table value at 4df-9.488, 2df-5.991,* -significant at 0.05 level**

Data in the table 14 indicates that there was significant association between Height-for- age (**X^2 =15.006, 4df**), and weight- for- age (**X^2 =15.019, 4df**),of under-five children and after intervention attitude scoresof mothers in the experimental group at 0.000 level of significance. **Hence the stated$H_4$is accepted**.

In the control group, there was no significant association between post test attitude scores of mothers and height-for-age (**X^2 =3.716, 4df**), weight –for-age(**X^2 =2.533, 4df**) and development (**X^2 =0.84, 1df**) of under-five children, at 0.05 level of significance.

Table 15: Association between Post test Scores of Practice of mothers and Growth and Development of under five children in the Experimental and Control group

N=300

Variables	Growth pattern	Experimental Group (n_1=150)				Control Group (n_2=150)			
		Practice scores				Practice Scores			
		Poor	Average	Adequate	'p' Value	Poor	Average	Adequate	'p' Value
		No	No	No		No	No	No	
Height-for-age	Normal	-	2	116	**X^2=3.860 'p'=0.045 1df**	35	14	-	X^2=3.061 'p'=0.216 2df
	Stunted	-	1	31		50	13	-	
	Severely Stunted	-	-	-		33	5	-	
Weight-for-age	Normal	-	2	128	X^2=**4.641 * 'p'=0.020 1df**	59	17	-	X^2=1.060 'p'=0.589 2df
	Under weight	-	0	20		35	11	-	
	Severely under weight	-	-	-		24	4	-	
Development	Acceptable	102	47	1	-	109	37	-	X^2=0.000 'p'=0.988 1df
	Delayed	-	-	-		3	1	-	

X^2 table value at 1df-3.841, 2df-5.991,* -significant at 0.05 level

Data in the table 15 indicates that there was a significant association between after intervention practice scores of mothers of the experimental group and Height- for- age (**X^2 =3.860, 1df**), and weight- for- age (**X^2 =4.641, 1df**),of under five children at 0.005 level of significance. **Hence the stated$H_4$is accepted**

In the control group, there was no significant association between post test practice scores of mothers and height-for-age(**X^2 =3.061, 2df**) , weight –for-age(**X^2 =1.060, 2df**) and development (**X^2 =0.000, 1df**) of under-five children at 0.05 level of significance.

Table 16: Self-Rating scale of mothers' opinion in the Experimental group regarding Self- Instructional-Module on Growth and Development of under-five children

N=150

Sl. No	Statement	Agree		Un certain		Disagree	
		f	%	F	%	f	%
1.	Self-Instructional module included all the necessary information related to growth and development of under-five children	150	100	-	-	-	-
2.	I became aware of the various diverse information on growth and development of under-five children	140	94.4	05	3.3	05	3.3
3.	The information is useful to monitor my child's growth and development in a healthier way	150	100	-	-	-	-
4.	The information was clear and understandable as it was assisted with pictures	145	96.7	-	-	05	3.3
5.	The language used is simple	150	100	-	-	-	-
6.	Information can be correlated with the day-to-day life experiences	145	96.7	-	-	05	3.3
7.	I was satisfied with the information provided	145	96.7	05	3.3	-	-
8.	It is very much necessary for the mothers to know about growth and development of children	150	100	-	-	-	-
9.	Self-study exercise is very easy to follow and complete	145	96.7	-	-	05	3.3
10.	Overall this study exercise is very good	150	100	-	-	-	-

Data in the table 16 depicts that**100%**of the mothers in the experimental group have agreed that the Self-Instructional-Module in terms of providing necessary information related to growth and development, monitoring the growth and development of their under- five children, simple language, effective study exercise.**96.7%** of mothers have agreed that the information was clear and understandable and satisfied with the information provided. **96.7%** have agreed that the information can be correlated with day-to-day experiences. **96.7%** have agreed that the Self-study exercise is very easy to follow and complete and only **94.4%** have agreed that through this module they became aware of the various diverse information on growth and development of under-five children.

CHAPTER-V

DISCUSSION

The aim of health education is to bring change in behaviour in a healthful manner in cognitive, affective and psychomotor domains, and not simply follow or repeat what generations have transferred.

The early years of life in an under-five child are most crucial as it influences significantly their future life as a successful adult. This is the period during which foundations are laid for the optimal growth and development of the child in terms of physical health, motor skills, cognition, social and personality development, communication and moral development. Mothers are the most significant teachers, socializing agents and caregivers for children during this period. They act as key intervention agents in their child's life and can be primary teachers of the special skills their child need to acquire. Hence mother's education and involvement in her child's growth and development are advantageous because a great many mothers are eager during their child's life to be good mother, to nurture their child and to have control over their child's optimal growth and development.

Self-Instructional -Module on growth and development of under-five children to the mothers serves as a standard guideline in providing necessary opportunities, environment, stimulation and nutrition for their under-five children and help them to attain optimal growth and development and also to prevent delay or defect.

The present Quasi-experimental study was intended to assess the effectiveness of SIM on the knowledge, attitude and practices regarding growth and development of under-five children among 300 mothers (Experimental group-150, Control group-150) of under-five children in Guttahalli and Keeluholali villages in the jurisdiction of Devarayasamudra PHC of Kolar District, Karnataka.

This chapter discusses on the major findings of the study, by keeping objectives and hypotheses as basis, and is transformed as findings of the study.

Organization of Findings

The analyzed data is organized and presented under the following sections

Section I: Demographic data of the mothers of under-five children and under five children

Section II:Assessment and comparison of the Knowledge, Attitude and Practice of mothers in both experimental and control group, regarding growth and development of under-five children before and after intervention.

Section III: Assessment and comparison of the pattern of growth and development of under-five children both in experimental and control group, before and after intervention

Section IV: Association between socio-demographic variables of mothers with their knowledge, attitude, and practice regarding growth and development of under-five children

Section V: Association between growth and development of under-five children and knowledge, attitude, and practice of their mothers

Section I: Demographic data of the mothers of under-five children and under five children

The analysis of the demographic data of the mothers revealed that, majority (**80%)** of mothers belonging to the age group 18-27 years in the experimental group, and majority (**73.3%)** of mothers in the control group belonged to the age group of 18-27 years.Regarding education, majority of the mothers (**44%**) in the experimental group and in the control group (**42%)** had high school education. Regarding occupation of the mothers, majority of mothers in the experimental group i.e. **98%** and **98.7**% of mothers in the control group were house wives. With regard to family income, majority of the mothers in the experimental group i.e**54**% had a family income of below Rs3, 500/- per month. **43.3**% of mothers in the control group had Rs. 3.501 -4,500 /- income per month. Regarding the type of family, majority of mothers in the experimental group i.e**69.3**% and **66%** in the control groupbelongs to nuclear family. With regard to Religion, majority of mothers in both experimental (**85.3%)**, and control group, (**92.0**%) belongs to Hindu religion.Regarding number of children, majority of mothers in both the experimental (**47.3**%) and control group (**66.7**%) had two children. Regarding Source of information, majority of mothers in both the experimental (**62.0**%) and control group (**84.7**%) had friends and family members as source of information. Only 6% in the control group and 19.3% in the experimental group had health professionals as source of information.

The above findings are supported by the findings of following studies.

A study conducted by **Joseph T, and Tata HS (2014),**analysis of demographic data of mothers revealed that majority of mothers belong to the age group of 18-27 years, majority of the mothers were Hindus, majority of the mothers belong to nuclear family, majority of mothers were house wives, majority of mothers education status was high school.

Study findings by **Gogoi N (2016),** revealed that majority of the mothers belongs to Hindu religion, maximum number of mothers had high school level education, maximum number of mothers had two children, maximum number of mothers were house wives

Demographic data of under-five children

The analysis of the demographic data of the under-five children revealed that, majority of children in the experimental group **(33.3%)** were in the age group of 4yrs 1month to 5 years and**40%**of children in the control group were in the age group of 2yrs 1month to 3 years.

Regarding gender, in the experimental group **56.7%** were male children and **43.3%** were female children. In the control group **54%**were male and **46%** were female children

Out of 300 under-five children (Experimental group-150, Control group-150), **23.3%** were infants, **10%** were between 1-2 years, 26.7% were between 2-3 years, **16.7%** were between 3-4years and 23.3% were between 4-5 years. **55.5%** were male children and **44.65%** were female children

Similar findings were evident in a study by **BhanderiD, and Choudhary SK (2011),** findings revealed similar results as out of 300 under-five children involved in the study, 20.3% were between birth to 1 year of age, 12% were between 1-2 years,21.3% were between 2-3 years,19.3% were between 3-4 years,27.1% were between 4-5 years. 55.5 % were males and 45.7 % were females.

Section II:**Assessment and comparison of the Knowledge, Attitude and Practice of mothers in both experimental and control group, regarding growth and development of under-five children before and after intervention**.

Overall Knowledge, Attitude and Practice of mothers before and after intervention in experimental and control group

A. Knowledge of mothers on Growth and Development of under-five children

Study findings revealed that **98%** of mothers both in the experimental and control group had poor knowledge before intervention, regarding growth and development of under-five children. Whereas after intervention, 98.7% of mothers in the experimental group showed good knowledge and **92%** of mothers in the control group remained at the same level.

These findings are consistent with the below mentioned study findings

D'costa A P.(2014),assessed mothers knowledge regarding weaning and findings revealed that before intervention, 80% of the mothers had average level of knowledge and after intervention, 62% of them had good level of knowledge.

UpadhyayD, et al (2014), assessed mothers knowledge regarding growth charting and found that 61.8% of the mothers were completely unaware of growth charting

Joseph T and Tata HS (2014),have assessed mothers knowledge regarding control and prevention of protein energy malnutrition among under-five children. Findings showed that before intervention, 41.66% had poor knowledge and after intervention, 55% of mothers had good knowledge

Rathore KC, Pandya A,and Ravindra HN (2014),have assessed mothers knowledge regarding selected common illness of children. The study findings showed that, before intervention, only 44.26% of mothers had adequate knowledge, and after intervention, 75.88% had adequate knowledge.

Gogoi N (2016), assessed mothers knowledge regarding prevention and home management of diarrhea and found that before intervention, 70% of the mothers had inadequate knowledge. Whereas after intervention, 42.5% of mothers had adequate knowledge.

Betageri K, and Tata S(2016),assessed mothers knowledge regarding ICDS services and found that only 1.67% had good knowledge before intervention, whereas after intervention, 88.3% of mothers showed good knowledge.

B. Attitude of mothers on Growth and Development of under-five children

The study findings revealed that, out of 300 mothers(Experimental group-150, Control group-150), **98.7%** of the mothers in the experimental group and **98%** of mothers in the control group had favourable attitude before intervention, whereas after intervention **94%** of mothers in the experimental group and only **1.3%** in the control group showed most favourable attitude

The study findings are supported by the findings of the below mentioned research studies.

Sukandar D, et al (2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices among mothers of under-five children. Findings revealed there was an increase of level of attitude from 71.8% to 76.9% in the experimental group and decrease in the level of attitude from 73.8% to 70.2% in the control group after intervention.

Harnagle R, andChawla PS (2013), conducted a survey to identify the knowledge, attitude and practices on breast feeding, weaning, immunization and dietary practices among lactating mothers from rural background. Findings revealed that majority of the mothers having unfavorable attitude regarding child health.

Sriram S, et al (2013), conducted a survey to assess the knowledge, attitude and practices of mothers regarding infant feeding practices, and found that inadequate attitude regarding feeding of certain food items.

Bhanderi D, andChoudhary SK (2011), conducted a cross sectional study to assess the attitude, beliefs and behavior regarding feeding practices of mothers of under-five children. Findings showed that majority of mothers having unfavourable attitude regarding feeding of colostrums, initiation of breast feeding, and exclusive breast feeding up to six months and selection of weaning diet.

C. Practice of mothers regarding Growth and Development of under-five children

With regard to Practice, out of 300 mothers(Experimental group-150, Control group-150), 98% of mothers in the experimental group and 78.7% of mothers in the control group had poor practices, before intervention. Whereas after intervention, majority (98.7%) of

mothers in the experimental group showed adequate practices and in the control group none of the mothers showed adequate practices.

Sukandar D, et al (2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices among mothers of under-five children. Findings revealed there was an increase of practice score from 65% to 75% in the experimental group and decrease in the practice score from 54.8% to 53.3% in the control group after intervention.

Harnagle R, andChawla PS (2013), conducted a survey to identify the knowledge, attitude and practices on breast feeding, weaning, immunization and dietary practices among lactating mothers from rural background. Findings revealed that majority of the mothers having poor practice regarding breast feeding and weaning.

Sriram S, et al (2013), conducted a survey to assess the knowledge, attitude and practices of mothers regarding infant feeding practices, and found that mothers having poor practices regarding feeding of certain food items.

Bhanderi D, and Choudhary SK (2011), conducted a cross sectional study to assess the attitude, beliefs and behaviour regarding feeding practices of mothers of under-five children. Findings showed that majority of mothers practices are influenced by customs and community beliefs regarding feeding of colostrums, initiation of breast feeding, and exclusive breast feeding up to six months and selection of weaning diet.

Comparison of Knowledge, attitude and practice of mothers in experimental and control group on growth and development of children with reference to the effectiveness of Self-Instructional- Module

a. Findings related to Knowledge of mothers in the Experimental and Control group on growth and development of under-five children

After administration of SIM, in the experimental group, after intervention mean knowledge score of **60,11** was higher than before intervention mean knowledge score of **9.68**. Computed **paired't' test** revealed that, the calculated't' value **(t_{149}=100.36)** was more than the table value at 0.05 level of significance, indicating significant increase in the knowledge level from pre test to post test among mothers of experimental group

In the control group, post test mean knowledge score, **30.73**, was higher than the pre test mean knowledge score of **21.00**. Computedpaired't' test revealed that, the calculated't' value **(t_{149}=27.071)** was more than the table value at 0.05 level of significance. This might be

due to influence of the pre test and which would have made mothers to give a thought regarding growth and development of under-five children.

The **Independent't' test** findings of post test mean knowledge scores of mothers between experimental group and control group revealed, calculated 't' value of **86.56** was more than the table value at 0.05 level of significance. This indicates significant increase in the knowledge of mothers in the experimental group compared to control group, though there was increase in post test knowledge scores of control group

b. Findings related to Attitude of mothers in the Experimental and Control group on growth and development of under-five children

After the intervention, in the experimental group, the mean Attitude score of **123.56** was higher than before intervention mean attitude score of **87.40**. Computed **paired't' test** revealed that, the calculated't' value **(t_{149}=45.07**) was more than the table value at 0.05 level of significance. Whereas in the control group, obtained 't'value was **0.020**, which was lesser than the table value at 0.05 level of significance. This indicates the significant increase in the level of attitude between pre test and post test in the experimental group compared to pre test and post test attitude score of the control group

Independent 't' test, obtained 't' value **30.927** for post test mean scores on attitude of mothers between experimental and control group was greater than the table value at 0.05 level of significance, indicating the significant increase in the level of attitude in the experimental group compared to the control group

c. Findings related to Practice of mothers in the Experimental and Control group on growth and development of under-five children

After the intervention, in the experimental group, the mean practice score of **55.82** was higher than before intervention mean practice score of **27.21.** Computed **paired't'** test revealed that, the calculated't' value **(t_{149}=91.251)** was more than the table value at 0.05 level of significance. Whereas in the control group, obtained 't'value was**1.708**, which was lesser than the table value at 0.05 level of significance. This indicates the significant increase in the level of practice between pre test and post test in the experimental group compared to pre test and post test practice scores of control group

Independent 't' test, obtained 't' value **64.177** for post test mean scores of practice of mothers between experimental and control group was greater than the table value at 0.05

level of significance, indicating the significant increase in the level of practice in the experimental group compared to control group

The abovefindings provide evidence for effectiveness of SIM regarding growth and development of under-five children in improving the level of knowledge, attitude, and practice of mothers of the experimental group.

This study findings are consistent with the below mentioned study findings.

Narang, et.al, (2009),conducted an experimental study to assess the impact of intervention programme on early childhood care andstimulation on knowledge and practices of mothers. Findings revealed that there was a significant difference in the after intervention scores of knowledge and practices of mothers between experimental and control group.

D'costa, A. P.,(2014), assessed effectiveness of SIM regarding weaning practices on knowledge of 50 mothers, who are lactating. Findings revealed significant increase in knowledge score after exposing to SIM.

Bala, E. P.,(2014), conducted a study to evaluate the effectiveness if SIM on knowledge of 60 mothers of under-five children who are attending play schools regarding prevention of diarrhea. Results showed significant increase in the post test knowledge scores of mothers at $p<0.001$ level and concluded that SIM was effective in improving the knowledge of mothers of under-five children

Joseph, T., et.al (2014), conducted a quasi experimental study to find out the effectiveness of health education programme on knowledge of mothers of under-five children regarding control and prevention of Protein Energy Malnutrition. Findings of the study revealed improvement in post test knowledge scores, which depicted the effectiveness of health education programme, in improving the knowledge of mothers.

Rathore, K.C., et.al (2014), conducted a quasi-experimental study to determine the impact of SIM regarding home management of selected common illness in children on knowledge of 60 mothers. Findings showed significant increase in the post test knowledge scores of mothers.

Sukandar, D., et al (2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices of

under-five children and also on nutritional status of under-five children. Findings revealed improvement in knowledge, attitude and practices of mothers in the experimental group and and also improved nutritional status of under-five children in the experimental group. Study suggested to plan interventions which influence the beliefs of mothers, in order to adopt better child rearing practices by them.

Rajesh, J., (2015), conducted one group pre test-post test quasi experimental study to assess the effectiveness of Self-Instructional Module regarding Protein energy Malnutrition in Under five children on knowledge of 30 mothers. Findings revealed improvement in knowledge of mothers after administration of SIM and significant association between knowledge scores and age of mothers.

Gogoi, N., (2016), conducted a study by adopting pre experimental one group pre-test post test design to determine the effectiveness of SIM on knowledge of mothers of under-five children regarding home management of diarrhea. Results revealed a significant increase (25.8%) of mean knowledge score from pre test to post test with a paired‘t’ value of 15.69 at 0.05 level of significance. Study has concluded that SIM was effective in improving the knowledge of mothers of under-five children.

Betageri, K., et.al (2016), assessed the effectiveness of structured teaching programme on knowledge of mothers of under-five children regarding utilization of ICDS services. Paired‘t’ test revealed significant difference between pre and post test knowledge scores at 0.001 level of significance. Researchers have concluded that structured teaching programme is an effective teaching strategy in imparting knowledge to the mothers.

Section III: Assessment and comparison of the pattern of growth and development of under-five children both in experimental and control group, before and after intervention

Overall growth and development of under-five children before and after intervention in experimental and control group

Height-for-Age

Study findings showed that, out of 300 under five children,before intervention,**54.7%** in the experimental group and **42%** in the control group, had stunted height-for-age, **14%** of children in the experimental group and**25.3%** in the control group had severely stunted height- for- age and **31.3%** in the experimental group and **32.7%** in the control group had normal height –for-age. Whereas after intervention,**78%** of the children in the experimental group and **36%** in the control group attained normal height-for-age, **22%** in the experimental group and **43.3%** in the control group remained as stunted height- for –age, and **20.7%** in the control group and none in the experimental group showed severely stunted height-for-age.

Weight-for-Age

With regard to weight-for age, out of 300 under five children, before intervention, **49.3%** of children in the experimental group and **30.7%** of children in the control group had underweight -for –age, **18.7%** each in both experimental and control group had severely underweight –for-age and **32%** in the experimental group and **50.7%** in the control group had normal weight-for-age. Whereas after intervention majority i,e**87.3%** of children in the experimental group and only **51.3%** in the control group had normal weight-for-age, **10.7%** in the experimental group and **30.7%** in the control group showed underweight for-age and only **2%** in the experimental group and **18%** in the control group showed severely underweight for age.

Development

Further the score of developmental pattern of under-five childrenremained same before and after intervention i.e. in the acceptable range of development in the experimental group. Whereas in the control group, **2.7%** of under-five children were in the range of delayed development before and after the intervention.

The present study findings are consistent with the findings of following studies in terms of prevalence of growth and developmental delay among under-five chiidren.

Nair, M.K., et al(2009), conducted a study to assess the prevalence of developmental delay, deformity and disability among under-five children and found that 2.31% of prevalence of developmental disabilities among 0-2 yrs children and 2.62% of prevalence of developmental disabilities among 2-5 yrs children. They have concluded by calling for policy implications in identifying childhood disabilities.

Pem, D., (2012) has done a descriptive survey to identify the factors affecting growth and development of under-five children through prevalence of growth and developmental problems. Findings revealed, 15% prevalence rate of problem in cognitive development, 33.5% prevalence of stunting in under-five children

Jeharsae, R., et.al ,(2013), conducted a study to identify the prevalence of growth and development delay among 498 under-five children who were affected with low-intensity armed conflict. They have assessed Growth parameters for weight-for-age, height-for-age, and weight-for-height, Development, by using Denver Development Screening Test II (Thai version). Results revealed, 19.3% prevalence of underweight, 27.6% prevalence of stunting, 7.4% prevalence of wasting and 37.1% prevalence of developmental delay

Bello, I.A., et.al (2013) assessed 330 under-five children from rural area, for their gross motor skills, fine motor skills, communication skills, cognition and social/personal interaction using Ages and Stages Questionnaire. Findings revealed, 5.8 % children having delay in communication, 6.7% having delay in gross motor domain, 9.7% having delay in fine motor domain, 10.0 % having delay in cognition and 12.4% having delay in social personal interaction.

Routray, S., et.al (2014), conducted a cross sectional study to assess the growth and development of under-five children living in orphanages. Physical growth was assessed by measuring anthropometry and development by using Denver Developmental screening Kit. Nutritional status was assessd by using WHO Z score growth charts and WHO BMI Z score charts. Results revealed, out of 188 children, 22.9% had stunting, 9.8% had wasting and 21.3% of under-five children had underweight. 14.7% had severe stunting, 8.2% had severe wasting and 10.6% had severe underweight. 29.5% of children were found with microcephaly, 8.3% were thin and no child was obese.52.1% of children were found with developmental delay, global delay was found in 32.9% and isolated delay was found in 19.2% of children among them.

Dabar, D.,et al**.(2016),** conducted a study to assess the socio-emotional and cognitive development, and associated factors among 520 under-five children by using Indian Council for Medical Research Development Screening Test. Results revealed that 10.6% of children exhibited developmental delay. Researchers have concluded that developmental delay during first five years may significantly affect the future life potentials.

Ertem, I.O.,(2016)et al conducted a study to assess knowledge of mothers on development of their children during early years of life. 1200 mothers' knowledge was assessed by using Caregiver KnowledgeofChild DevelopmentInventory(CKCDI) who was selected by using simple random sampling. Findings revealed, most of the mothers were not aware that vision (52% of mothers), speech (79%of mothers), social smile (59%of mothers) and brain development (68% of mothers) begins during the early months of life. Study has recommended for educational intervention programme for mothers to improve knowledge regarding early childhood development

Comparison of growth and development of under-five children before and after intervention in experimental and control group

Height-for-Age

After intervention, the mean scores of Height-for-age of under-five children,in the experimental group,were higher than before intervention mean scores of Height-for-age of all the age(infant, toddler and preschooler) groups. Computed paired 't' test revealed that , the calculated 't' values(**Infant-5.901, Toddler-8.359, preschooler-12,13**) were more than the table values at 0.05, level of significance. Whereas in the control group, after intervention mean scores of Height-for-age were slightly greater than before intervention mean scores of Height-for-age of all the age groups, but Computed paired 't' test revealed that , the calculated 't' values (**Infant-1.970, Toddler-1.741, preschooler-1.456**) were smaller than the table values at 0.05 level of significance.

Weight -for-Age

In the experimental group, after intervention mean scores of weight -for-age of under-five children, were greater than before intervention mean scores of weight-for-age of all the age groups. Computed paired't' test revealed that, the calculated't' values (**Infant-4.145,**

Toddler-5.745, preschooler-7.937) were greater than the table values at 0.05 level of significance. Whereas in the control group, after intervention mean scores of weight -for-age were slightly greater than before intervention mean scores of weight -for-age of all the age groups. But Computed paired't' test revealed that, the calculated't' values (**Infant-1.333, Toddler-1.158, preschooler-2.951**) were smaller than the table values at 0.05 level of significance for all the age groups.

Before intervention, the mean scores of height-for age and weight for age of all the age group of children in the experimental group were slightly different from before intervention mean height-for age and weight for age of the control group. Computed Independent't' test revealed that, the calculated't' values of Height-for-age (**Infant-0.824, Toddler-1.408, preschooler-1.387**)and Weight-for-Age (**Infant-1.775, Toddler-0.068, preschooler-1.233**) were smaller than the table values at 0.05 level of significance, indicating that statistically no significant difference in the before intervention scores of both groups.

Further, after intervention mean scores of height-for age and weight for age of all the age group of children in the experimental group were greater than after intervention mean scores of height-for age and weight for age of the control group. Computed Independent't' test revealed that, the calculated 't' values of Height-for-age(**Infant-2.640, Toddler-2.878, preschooler-5.760**) and Weight-for-age (**Infant-3.780, Toddler-2.253, preschooler-2.894**)were greater than the table values at 0.05 level of significance indicating statistically significant difference in the after intervention scores of both groups.

The above discussed findings provide evidence for effectiveness of SIM regarding growth and development of under-five children in improving the level of knowledge, attitude and practice of mothers of the experimental group, which in turn had influenced mothers in providing better environment, facilities, nutrition and stimulation for their under-five children in order to attain the optimal growth and development.

The findings of the study are consistent with the findings of the following studies

Ramji, S., (2009), conducted a review of literature on impact of feeding and caring practices of mothers on health and nutritional status of their children. Evidences suggested

that inadequate feeding practices of mothers are the cause for under nutrition among children. Further to rectify these practices, interventions need to be planned by involving both family and community in a participatory manner, so that they will become change agents in promotion of child health.

Sukandar, D., et al, (2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices of under-five children and also on nutritional status of under-five children. Findings revealed improvement in knowledge, attitude and practices of mothers in the experimental group and also improved nutritional status of under-five children in the experimental group.

Section IV:Association between socio-demographic variables of mothers with their knowledge, attitude, and practice regarding growth and development of under-five children in experimental and control group

Association between Knowledge and Socio Demographic Variables of mothers

Chi-square test showed a significant association between occupation (X^2 **=15.00, 1df**),typeof family (X^2 **=6.921, 1df**), religion (X^2 **=6.179, 1df**) source of information (X^2 **=15.800, 2df**) and gender of the child (X^2 **=15.00, 1df**) and after the intervention knowledge scores of mothers in the experimental group at 0.05 level of significance.

In the control group none of the variables demonstrated a significant association with Post test scores of the knowledge of mothers.

Association between Attitude and Socio Demographic Variables of mothers

Chi square test revealed, a significant association between occupation (X^2 **=15.000, 2df**), religion, (X^2 **=6.661, 2df**), source of information (X^2 **=15.060, 4df**), and gender **(**X^2 **=15.030, 2df**), of the child and after the intervention attitude scores of mothers in the experimental group at 0.05 level of significance.

In the control group none of the variables demonstrated a significant association with Post test scores of the attitude of mothers.

Association between Practice and Socio Demographic Variables of mothers

Chi-square test findings revealeda significant association between occupation ($\mathbf{X^2}$ **=4.739, 1df**), religion ($\mathbf{X^2}$ **=4.101, 1df**), source of information ($\mathbf{X^2}$ **=6.711, 2df**), and gender ($\mathbf{X^2}$ **=3.854, 1df**), of the child and after the intervention practice scores of mothers in the experimental group at 0.05 level of significance.

In the control group none of the variables demonstrated a significant association with Post test scores practice of mothers.

The findings of the study are consistent with the findings of the following studies.

Bornstein, M.H.,et al,**(2010),** assessed and compared knowledge of mothers who had children between 0-2 years of age, on parenting skills. Comparison was made between social status and adult mothers and adolescent mothers. Significant association was found between knowledge and socio demographic variables like age, education, number of children and support from the family members.

Saeidi, M., et al (2013), conducted a cross-sectional descriptive analytical study to assess the relationship between mother's educational status and child rearing practices of children. Findings revealed that mother's with good educational background had better child rearing practices like giving less junk food, using oil and butter in the child's food, and monitoring of child's growth. Hence they have concluded that mother's educational status influences the child's growth and development.

D'costa, A. P.,(2014), assessed effectiveness of SIM regarding weaning practices on knowledge of 50 mothers, who are lactating. Findings showed a significant association between knowledge of mothers and socio demographic variables such as mothers' education, occupation, and income, type of family and source of information at a level of significance 0.05.

Upadhyay, D., et al, (2014) conducted a survey of 186 rural mothers knowledge regarding growth charting of under-five children. There was significant association between knowledge of mothers and socioeconomic status and level of education.

Joseph, T., et al (2014), conducted a quasi experimental study to find out the effectiveness of health education programme on knowledge of mothers of under-five children regarding control and prevention of Protein Energy Malnutrition. Findings revealed

significant association between socio demographic variables of the mother like type of diet, occupation type of family and their knowledge.

Mohammed, **E.S.,** et al **(2014)**, conducted a cross-sectional study to assess the knowledge, attitude and practices of mothers living in rural area regarding breast feeding, complementary feeding and weaning and also to identify the relationship between age and education of the mothers and on these aspects. A Significant association was found between mother's education and practice on exclusive breast feeding.

Kulkarni, V.G., et al (2015), conducted a cross sectional study to assess the impact of maternal literacy on their weaning practices in a rural area. Study findings revealed that literate mothers had better practices compared to illiterate mothers and there was a significant association between mother's education and age of initiation of weaning.

Rajesh, J., (2015), conducted one group pre test-post test quasi experimental study to assess the effectiveness of Self-Instructional Module regarding Protein energy Malnutrition in Under -five children on knowledge of mothers. The Findings of the study revealed,a significant association between knowledge scores and age of mothers.

Section V:Association between growth and development of under-five children and knowledge, attitude, and practice of their mothers in experimental and control group.

Association between the Knowledge of mothers and Growth and Development of under-five children

Chi-square test revealed, a significant association between after the intervention knowledge scores of mothers of the experimental group and Height- for- age ($\mathbf{X^2 = 3.860, 1df}$), and weight- for- age ($\mathbf{X^2 = 4.641, 1df}$),of under five children at 0.05 level of significance.

In the control group, no significant associationwas found between post test knowledge scores of the mothers and height-for-age and weight –for-age of under-five children.

Association between the Attitude of mothers and Growth and Development of under-five children

Chi-square test revealed, a significant association between Height- for- age**(X^2 =15.006, 4df)**, and weight- for- age (**X^2 =15.019, 4df**),of under-five children and after the intervention attitude scoresof mothers in the experimental group at 0.05 level of significance.

In the control group, there was no significant association between post test attitude scores of mothers and height-for-age and weight –for-age of the under-five children.

Association between the Practiceof mothers and Growth and Development of under-five children

The study findings showed a significant association between after intervention practice scores of mothers of the experimental group and Height- for- age (X^2 =3.860, 1df), and weight- for- age (**X^2 =4.641, 1df**),of under five children at 0.05 level of significance.

In control group, there was no significant association between posttest practice scores of mothers and height-for-age and weight –for-age of the under-five children.

The study findings provide evidence for importance of an under-five child having a mother with good knowledge and positive attitude regarding growth and development and good child rearing practices, as she becomes a catalyst in the process of attainment of optimal growth and developmental milestones by an under-five child.

The findings of the study are in consistent with the findings of the following studies.

Pem, D., (2012) has done a descriptive survey to identify the factors affecting growth and development of under-five children through prevalence of growth and developmental problems. Findings identified nutrition, behaviour of parents, cultural and social practices of the family, and environment as five major factors contributing to the growth and development at early childhood.

Routray, S., et al (2014) conducted a cross sectional study to assess the growth and development of under-five children living in orphanages. Physical growth was assessed by measuring anthropometry and development by using Denver Developmental screening Kit. Nutritional status was assessed by using WHO Z score growth charts and WHO BMI Z score charts. Finally researchers have concluded that maternal deprivation as the main cause for this in appropriate growth and development in spite of provision of good nutrition in orphanages.

Ramji, S., (2009), conducted a review of literature on impact of feeding and caring practices of mothers on health and nutritional status of their children. Evidences suggested that inadequate feeding practices of mothers are the cause for under nutrition among children.

Sukandar, D., et al (2015), conducted an experimental study to assess the effectiveness of nutrition education intervention on knowledge, attitude and practices of under-five children and also on nutritional status of under-five children. Findings revealed improvement in knowledge, attitude and practices of mothers in the experimental group and also improved nutritional status of under-five children in the experimental group.

Ertem, I.O., et al(2016) conducted a study to assess knowledge of mothers on development of their children during early years of life. Findings revealed, most of the mothers were not aware that vision (52% of mothers), speech (79%of mothers), social smile (59%of mothers) and brain development (68% of mothers) begins during the early months of life. Study has recommended for educational intervention programme for mothers to improve knowledge regarding early childhood development

Saaka, M., (2014), conducted an analytical cross-sectional study to assess the relationship between mothers knowledge and practices regarding child nutrition and growth of 0-36 months aged children, by using questionnaires and anthropometry. Results revealed positive association between mothers' knowledge and practices on nutrition and growth of 0-36 months age group children.

Self-rating Scale on mothers opinion regarding Self-Instructional- Module

Further,the investigator has assessed opinion of the mothers of experimental group regarding SIM. **100%**of the mothers in the experimental group have agreed that the Self-Instructional-Module in terms of providing necessary information related to growth and development, monitoring the growth and development of their under- five children, simple language, effective study exercise.**96.7%** of mothers have agreed that the information was clear and understandable and satisfied with the information provided. **96.7%** have agreed that the information can be correlated with day-to-day experiences. **96.7%** have agreed that the Self-study exercise is very easy to follow and complete and only **94.4%** have agreed that through this module they became aware of the various diverse information on growth and development of under-five children.

This chapter has dealt with the analysis, results, interpretation and discussion of the significant findings of the study in relation to the findings of the other studies.The study revealed that, before intervention, the existing mean scores of Knowledge, Attitude and practice of mothers were not satisfactory. After exposure to intervention in the form ofSelf-Instructional-Module on growth and development of under-five children, there was significant improvement in mean scores of Knowledge, Attitude and practice of mothers. Findings also revealed that there was significant increase in the pattern of growth and development of children, whose mothers are exposed to intervention. Thus suggests the significant impact of SIM. All the participants were highly satisfied with the information that was given and reported that it was very much useful

CHAPTER -VI

SUMMARY, MAJOR FINDINGS, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

This chapter gives a brief account of the outcome of the study conducted in Guttahalli and Keeluholali villages in the jurisdiction of Devarayasamudra PHC of Kolar District, Karnataka, its implication for nursing, recommendations and suggestion for further research.

SUMMARY

A Quasi- experimental design was adopted to determine the effectiveness of Self Instructional Module on Knowledge, Attitude and Practice of mothers regarding growth and development of under-five children, and patterns of growth and development of under-five children.

A review of related literature was done in terms of prevalence of delay in growth and development, factors influencing growth and development focusing towards mothers knowledge, attitude and practices regarding growth and development of under-five children, and its influence on the patterns of growth and development of under-five children, and also effectiveness of Self Instructional Module on Knowledge, Attitude and Practice of mothers. This extensive literature review helped the investigator to select an appropriate research approach, design, sampling technique and method of data collection and analysis.

The conceptual frame work adopted for the study was based on Context, Input, Process and Product (CIPP) model on evaluation developed by **Daniel Stufflebeam (2003).**

Content validity of the tools and SIM was obtained from 10 experts (06 nursing and 04 medical) and necessary modifications were made based on the suggestions. Reliability was tested by the internal consistency method by using Split-Half-Technique for knowledge and attitude questionnaires and the Cronbach's Alpha values were 0.92 and 0.74 respectively.

This study was conducted for a period of 8 months. The sample was chosen by using purposive sampling technique and consisted of 300 mothers. Out of which 150 were in the experimental group and 150 were in the control group. After the pre-test on Knowledge by using **questionnaire**, Attitude by using **5-Point Likert's Scale** and Practice by using

Observational Checklist among mothers regarding growth and development of under-five children and measuring the height and weight, and developmental milestones assessment of under-five children by using DDST-II, the SIM was given to the mothers of the experimental group on meaning and factors influencing growth and development, various domains and pattern of growth and development of under five children, role of nutrition and play in growth and development, anticipatory guidance, and child rearing practices. Post test was then conducted for both the Experimental and Control group after 8-10 days by using the same pre test questionnaire, and height and weight and developmental milestones of the under-five children were reassessed after three months of pre test. Mother's opinion regarding SIM was collected by using Self-Rating-Scale from mothers of experimental group at the time of post test.

Descriptive statistics such as frequency, percentage, mean and standard deviation were used to present the demographic data and level of knowledge, attitude and practice. Inferential statistics such as paired't'-test, independent 't'- test were used to determine the effectiveness of SIM on Knowledge, Attitude and Practice of mothers and growth and development of under-five children in the experimental and control group. Chi-square tests were used to find the association Socio-Demographic variables with Knowledge, Attitude and Practice of mothers and growth and development of under-five children

MAJOR FINDINGS OF THE STUDY

1. **Demographic variables**

Experimental group:

- Majority (**80%**), of mothers were in the age group of 18-27 years
- Majority (**44%**) of mothers had high school level of education
- Majority (**98%**)of mothers were housewives
- Majority **(54%)** of mothers had a family income of <3,500/-rupees per month.
- Majority (**69.3%**)of mothers were living in nuclear family
- Majority (**85.3%)** of mothers were Hindus
- Majority (**47.3%**) of the mothers had two children
- Only **19.3%** of the mothers said Health professionals as their source of information
- Majority (**33.3%)** of under-five children were in the age group of 4-5 years
- Majority (**56.7%)** were male children

Control Group:

- Majority (**73.3%)** of mothers were in the age group of 18-27 years
- Majority (**42%**) of mothers had high school level of education
- Majority **(98.7%**)of mothers were housewives
- Majority (**43.3%)** of mothers had a family income of <3,500/-rupees per month.
- Majority (**66%**)of mothers were living in nuclear family
- Majority (**92%**) of mothers belongs to Hindu religion
- Majority (**66.7%)** of the mothers had two children
- Only **6**% of the mothers said Health professionals as their source of information
- Majority (**40%**) of under-five children were in the age group of 2-3 years
- Majority (**54%**) were male children

2. **Findings related to the Knowledge, Attitude and practice of mothers regarding growth and development of under-five children before and after intervention in experimental and control group**

Before Intervention findings revealed the following:

- None of the mothers had good knowledge regarding growth and development of underfve children in both groups.
- Majority **(98%)** of the mothers in both the groups showed favourable attitude.
- Only **0.7%** of the mothers from the Experimental group had adequate practices.

After intervention findings revealed the following:

- Majority (**98.7%)** of the mothers in the Experimental group showed good knowledge after the intervention, while only **1.3%** of mothers in the Control group showed good knowledge afterthe intervention.
- Majority **(94%)** of the mothers in the Experimental group, showed most favourable attitude after the intervention, while only **1.3%** of the mothers in Control group, showed most favourable attitude after the intervention.
- Majority **(98.7%)** of the mothers in the experimental group showed adequate practices after the intervention, none in Control group, showed adequate practice after the intervention.

3. **Findings related to the growth and development of under-five children before and after intervention in the experimental and control group**

Before intervention findings:

- Majority .(**54.7% & 42%)** , of under-five children had stunted height for age in the experimental and control groups respectively
- **49.3%** of under-five children in the experimental group and 30.7% in the control group had under weight for age.
- **None** in the experimental group and **2.7%** in the control group had delayed developmental milestones

After intervention findings:

- **78%** of under-five children in the experimental group showed normal height for age and **43.3%** of under-five children in the control group showed stunted height for age after the intervention

- **87.3%** of under-five children in the experimental group and **51.3%** in the control group showed normal weight for age after the intervention
- **100%** of under-five children in the experimental group remained in acceptable level of development after the intervention

4. **Findings related to comparison of knowledge, attitude and practice scores of mothers in experimental and control group before and after intervention**

Experimental Group:

Paired 't' test findings revealed significant difference between before and after intervention knowledge, attitude and practice scores of mothers in the experimental group ($p<0.000$), at 0.05 level of significance.

Control Group:

Paired 't' test findings revealed a significant difference only, between before and after the intervention knowledge scores **($p<0.001$),** at 0.05 level of significance. But there was no significant difference between before and after the intervention scores of attitude and practice **($p= 0.984$ and 0.748** respectively) of mothers in the control group at 0.05 level of significance.

5. **Findings related to comparison of the knowledge, attitude and practice scores of mothers between experimental and control group before and after intervention**

Before Intervention:

Independent't' test findings do not show any significant difference between before the intervention knowledge, attitude and practice scores (**$p= 0.364, 0.213, 0.450$** respectively) of mothers in the experimental and control group at 0.05 level of significance.

After Intervention:

Independent't' test findings showed a significant difference between after the intervention knowledge, attitude, and practice scores (**$p<0.001$**) of mothers in the experimental and control group at 0.05 level of significance

6. **Findings related to comparison of the pattern of growth and development of under-five children in experimental and control group before and after intervention**

Experimental Group:

Paired 't' test findings revealed a significant difference between before and after the intervention height-for-age and weight-for-age scores of under-five children in the experimental group (**p<0.05**), at 0.05 level of significance.

Control Group:

Paired 't' test findings do not show significant difference between before and after the intervention height-for-age and weight-for-age scores of under-five children (**p>0.05**) in the control group at 0.05 level of significance.

7. **Findings related to comparison of pattern of growth and development of under-five children between experimental and control group before and after intervention**

Before Intervention:

Independent't' test findings do not show any significant difference between before intervention height-for-age and weight-for-age scores **(p>0.05**) of undefive children in the experimental and control group at 0.05 level of significance.

After Intervention:

Independent't' test findings showed a significant difference between after the intervention height-for-age and weight-for-age scores (**p<0.05**) of under-fivechildren in the experimental and control group at 0.05 level of significance

8. **Findings related to association between Socio- Demographic variables and after intervention knowledge, attitude and practice scores of mothers in experimental and control group.**

Experimental Group: Knowledge

The study findings revealed a significant association between occupation **(p<0.05),**type of family (**p=0.031**), religion (p=0.046) source of information (**p<0.05**) and

gender of the child**(p<0.05**) and after the intervention knowledge scores of mothers at 0.05 level of significance

Attitude

The study findings revealed a significant association between occupation (**p<0.05**), religion (**p=0.036**) source of information**(p<0.05**) and gender of the child (**p<0.05**) and after the intervention attitude scores of mothers at 0.05 level of significance

Practice

The study findings revealed a significant association between occupation (**p=0.021**), religion (**p=0.056**) source of information **(p=0.031**) and gender of the child (**p=0.056**) and after the intervention Practice scores of mothers at 0.05 and level of significance

Control Group:

The study findings do not show any significant association between socio-demographic variables and after the intervention knowledge, attitude and practice scores of mothers of the control group.

9. Findings related to association between after intervention knowledge, attitude and practice scores of mothers and after intervention pattern of growth and development of under-five children in experimental and control group.

Experimental group:

Knowledge and growth and development

The study findings showed a significant association between after the intervention knowledge scores of mothers of the experimental group and Height- for- age (**p=0.042**), and weight- for- age (**p=0.020**), of under five children at 0.05 level of significance.

Attitude and growth and development

The study findings showed a significant association between after the intervention attitude scores of mothers of the experimental group and Height- for- age **(p>0.05**), and weight- for- age **(p>0.05**), of under five children at 0.001 level of significance.

Practice and growth and development

The study findings showed a significant association between after the intervention practice scores of mothers of the experimental group and Height- for- age **(p=0.045**), and weight- for- age (**p=0.020**), of under five children at 0.05 level of significance.

Control Group:

The study finding do not show any significant association between after the intervention knowledge, attitude, and practice scores of mothers and after intervention pattern of growth and development of the under-five children **(p>0.05**) in the control group at 0.05 level of significance.

10. Findings related to opinion of mothers of experimental group regarding Self-Instructional-Module

Findings shows that**100%**of the mothers in the experimental group have agreed that the Self-Instructional-Module in terms of providing necessary information related to growth and development, monitoring the growth and development of their under- five children, simple language, effective study exercise.**96.7%** of mothers have agreed that the information was clear and understandable and satisfied with the information provided. **96.7%** have agreed that the information can be correlated with day-to-day experiences. **96.7%** have agreed that the Self-study exercise is very easy to follow and complete and only **94.4%** have agreed that through this module they became aware of the various diverse information on growth and development of under-five children.

CONCLUSION

This study was aimed at assessing the effectiveness of SIM regarding growth and development of under-five children on Knowledge, Attitude, and Practice of mothers and patterns of growth and development of under-five children.

Following conclusions are drawn based on the findings of the study:

Overall knowledge, attitude, and practice of mothers before and after the intervention, findings shoed **98%** of mothers both in the experimental and control group had poor knowledge before the intervention, regarding growth and development of under-five children. Whereas after the intervention, **98.7%** of mothers in the experimental group showed good knowledge and 92**%** of mothers in the control group remained at the same level.**98.7%** of the mothers in the experimental group and **98%** of mothers in the control group had favourable attitude before the intervention, whereas after the intervention **94%** of mothers in the experimental group and only **1.3%** in the control group showed most favourable attitude **98%** of mothers in the experimental group and **78.7%** of mothers in the control group had poor practice, before the intervention. Whereas after the intervention, majority **(98.7%)** of mothers in the experimental group showed adequate practice and in the control group none of the mothers showed adequate practice.

Comparison of the knowledge, attitude, and practice of mothers before and after the intervention **within** experimental and control group showed that, after intervention mean knowledge, attitude, and practice scores (**60.11,123.56, & 55.82** respectively) were higher than before intervention mean knowledge, attitude and practice scores (**9.68, 87.40 & 27.21** respectively) in the experimental group. The computed paired 't' test also showed significant difference between before and after mean scores ($p<0.001$) at 0.05 level of significance. In the control group after intervention mean knowledge, attitude and practice scores (**30.75, 91.98 & 28.60** respectively) were slightly higher than before intervention mean knowledge, attitude and practice scores (**21, 91.90 & 27.60** respectively). However, The computed paired 't' test showed a significant difference between before and after mean scores ($p<0.001$) at 0.05 level of significance, only for knowledge, but for attitude and practice, findings do not show significant difference ($p>0.05$) at 0.05 level of significance

Comparison of the knowledge, attitude, and practice of mothers before and after the intervention **between** experimental and control group showed that, after intervention

mean scores of knowledge, attitude and practice (**60.11,123.56, & 55.82** respectively) of the experimental group were higher than the after the intervention mean scores of knowledge, attitude, and practice (**30.75, 91.98 & 28.60** respectively) of control group. The computed independent 't' test also showed a significant difference between after intervention mean scores of experimental and control group($p<0.001$) at 0.05 level of significance. But there was no much difference between before intervention mean scores of knowledge, attitude and practice scores **(9.68, 87.40 & 27.21** respectively) of the experimental group and before intervention mean knowledge, attitude and practice scores (**21, 91.90 & 27.60** respectively) of the control group. The computed independent 't' test also do not show significant difference between before intervention mean scores of the experimental and control group($p>0.05$) at 0.05 level of significance.

Overall growth and development of the under-five children in terms of height-for-age and weight-for age, before the intervention, **14%** of children in the experimental group and **25.3%** in the control group had severely stunted height- for- age and **18.7%** each in both experimental and control group had severely underweight –for-age. Whereas after intervention, **78%** of the children in the experimental group and **36%** in the control group attained normal height-for-age and **87.3%** of children in the experimental group and only **51.3%** in the control group had normal weight-for-age.

Further, the **developmental pattern** of under-five children remained at the same level before and after the intervention i.e. in the acceptable range of development in the experimental group. Whereas, in the control group, **2.7%** of under-five children were in the range of delayed development before and after the intervention

Comparison of growth and development of the under-five children **within the** experimental and control group, showed that, after the intervention mean scores of height-for age and weight for age of under-five children were higher than before intervention mean scores of height-for age and weight for age, in the experimental group. Computed paired 't' test also revealeda significant difference between before and after intervention mean scores(**$p<0.05$**) at 0.05 level of significance.

In the control group also after intervention mean scores of height-for age and weight for age of under-five children were slightly higher than before the intervention mean scores of height-for age and weight for age, but Computed paired 't' test do not reveal a significant

difference between before and after intervention mean scores(**p>0.05**) at 0.05 level of significance.

Comparison of growth and development of the under-five children **between the** experimental and control group, showed that, before intervention, mean scores of height-for age and weight for age of all the age group of children in the experimental group were slightly different from before intervention mean height-for age and weight for age of the control group. But, Computed Independent't' test does not reveal significant difference in before intervention scores of both groups, **(p>0.05**) at 0.05 level of significance. Whereas, after the intervention mean scores of height-for age and weight for age of all the age group of children in the experimental group were greater than after the intervention mean scores of height-for age and weight for age of the control group and Computed Independent't' test also revealed a significant difference in after the intervention scores (**p<0.05**) of both groups at 0.05 level of significance.

A Significant association was found between after intervention knowledge, attitude and practice scores of mothers and socio demographic variables like occupation, type of family, religion and source of information and gender of the child in the experimental group **(p<0.05**) at 0.05 level of significance. Whereas, in the control group none of the variables had significant association with the post test scores of knowledge, attitude and practice of mothers **(p>0.05**) at 0.05 level of significance.

The findings revealed, a significant association at 0.05 level of significance, between growth and development of under-five children and after the intervention scores of knowledge, attitude and practice of mothers in the experimental group **(p<0.05**). Where as, in the control group findings do not show any significant association between growth and development of under-five children and post test scores of knowledge, attitude and practices of mothers **(p>0.05**) at 0.05 level of significance.

The Majority of the mothers gave positive opinion regarding the Self-instructional-Module in terms of its usefulness, relevance and practicability.

Finally, the investigator concluded that the Self-Instructional-Module on growth and development of under-five children was effective in improving the knowledge, attitude and practices of mothers in the experimental group, which was further supported by improvement

in the growth and development of under-five children in the experimental group, as it plays a vital role in achieving their future life potentials.

IMPLICATIONS

A most precious and infinite wealth a mother gives to her child is, helping the child to have optimal growth and development, especially during its first five years as it lays foundation for them to achieve their potentials and become a successful and responsible citizen of the country. Hence a commendable knowledge, attitude and practice of mothers regarding growth and development of under-five children is most essential, in helping their children to achieve normal growth and developmental milestones. As the findings of the present study emphasized the effectiveness of structured information on improving the knowledge, attitude and practice of mothers, it has implications to nursing practice, education, administration and research.

Nursing Practice

- The paediatric nurses inthe hospital can use SIM as guideline to meet the special needs of the under-five children and educate mothers of under-five children regarding developmental milestones of under-five children.
- The community health nurse, during her home visit, can educate mothers of under-five children regarding monitoring of developmental milestones.
- This would enable the mothers to meet their child's special needs in the early years of their growth and development and paves the way for the mother to monitor her child to attain normal patterns of growth and development

Nursing Education

- The study findings will help the nurse educator tohighlight the effectiveness of Information Education and Communication among the nursing students and staff.
- The nurse educator can highlight the effectiveness of Self-instructional-Module as the best method of giving health information to the mothers
- It also helps the nurse educator to guide students to plan health education in the community and hospital

Nursing Administration

- The study results can be the basis for in-service education by the nursing department, by emphasizing the skill in assessment of growth and development and identifying any delay or deformity
- At PHC, in-service- education can be planned for ANM's by emphasizing the assessment of growth and development and also educating the mothers regarding importance of meeting the growth and developmental needs of an under-five child
- The copies of the SIM , can be made available in PHC and pediatric outpatient department.

Nursing Research

- The findings of the study would contribute to conduct future studies by using quantitative approach.
- The suggestions and recommendations can be utilized by other researchers for further studies in the same field, in different settings with larger sample for generalization of findings.
- The outcome of the study may serve as guideline in preparing the teaching programme on growth and development of children in all the age groups and to identify and manage developmental problems of children.

RECOMMENDATIONS

Based on the experience gained by conducting the study, obtained findings, interpretations made and conclusions drawn, following recommendation are made:

1. A similar study may be conducted, by using the same tools with larger samples.
2. A true experimental study can be conducted by using the same tools.
3. A similar study may be conducted by using longitudinal approach to evaluate the effectiveness of SIM.
4. A similar study can be conducted to staff nurses working in the pediatric wards and anganawadi workers.
5. A similar study can be conducted for mothers of school age and adolescent age group
6. A similar study can be conducted for teachers of school age and adolescent age group
7. A comparative study can be conducted between urban and rural mothers.

LIMITATIONS OF THE STUDY

The following limitations were recognized by the researcher:

1. The study was limited to 300 mothers (Experimental group-150 & Control group-150), who were residing in the selected rural area, Karnataka
2. The study was limited to only literate mothers
3. Purposive sampling technique was used to recruit the samples
4. Long term effect of SIM could not be evaluated

This chapter dealt with major findings of the study, conclusion, implications, limitations of the study and recommendations.

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ANNEXURE 1

LETTER SEEKING PERMISSION TO CONDUCT RESEARCH STUDY

From,
Mrs.Radha.M.S.
Asst.Professor,
Sri Devaraj Urs College of Nursing,
Tamaka, Kolar-563101.

To,
The Medical Officer,
Primary Health Center,
Devaraya Samudra,
Kolar District

Respected Sir/Madam,

Sub: Requesting permission for conducting the research study-reg:

I am a II year Ph.D. degree in Nursing student and intended to do my research study "**Effectiveness of Self Instructional Module on the Knowledge, Attitude and Practices of mothers regarding Growth and development and pattern of growth and development among under fives in a selected PHC of Kolar district, Karnataka",** which has to be submitted to the Vinyaka Missions University and Research Foundations, Salem, as a requirement for the award of Ph.D. degree in Nursing.

Hence I request you to kindly grant me, permission to conduct the research study in selected rural areas of Devaraya Samudra PHC Jurisdiction.

Thanking you in anticipation,

Yours Sincerely,
M.S.
Radha.M.S.

Place: KOLAR

Date: 19/02/09

Kotamangala, V. Guttahalli } These two villages has been Choosen for the study.

ವೈದ್ಯಾಧಿಕಾರಿಗಳು 19/02/09
ಪ್ರಾಥಮಿಕ ಆರೋಗ್ಯ ಕೇಂದ್ರ
ದೇವರಾಯಸಮುದ್ರ

ANNEXURE 2

Consent Form

Dear participant,

I am Mrs. Radha M.S. Ph.D(N) student, conducting a study on

" Effectiveness of Self – Instructional-Module on the Knowledge, Attitude, and Practice of mothers regarding Growth and Development and Patterns of growth and development among under-fives in a selected PHC of Kolar District, Karnataka". You will be asked to answer a knowledge questionnaire and an attitude scale to give your response related to growth and development of under-five children. The information collected will be kept confidential and used only for the study purpose. If you are accepting to participate in the study, kindly sign this consent form.

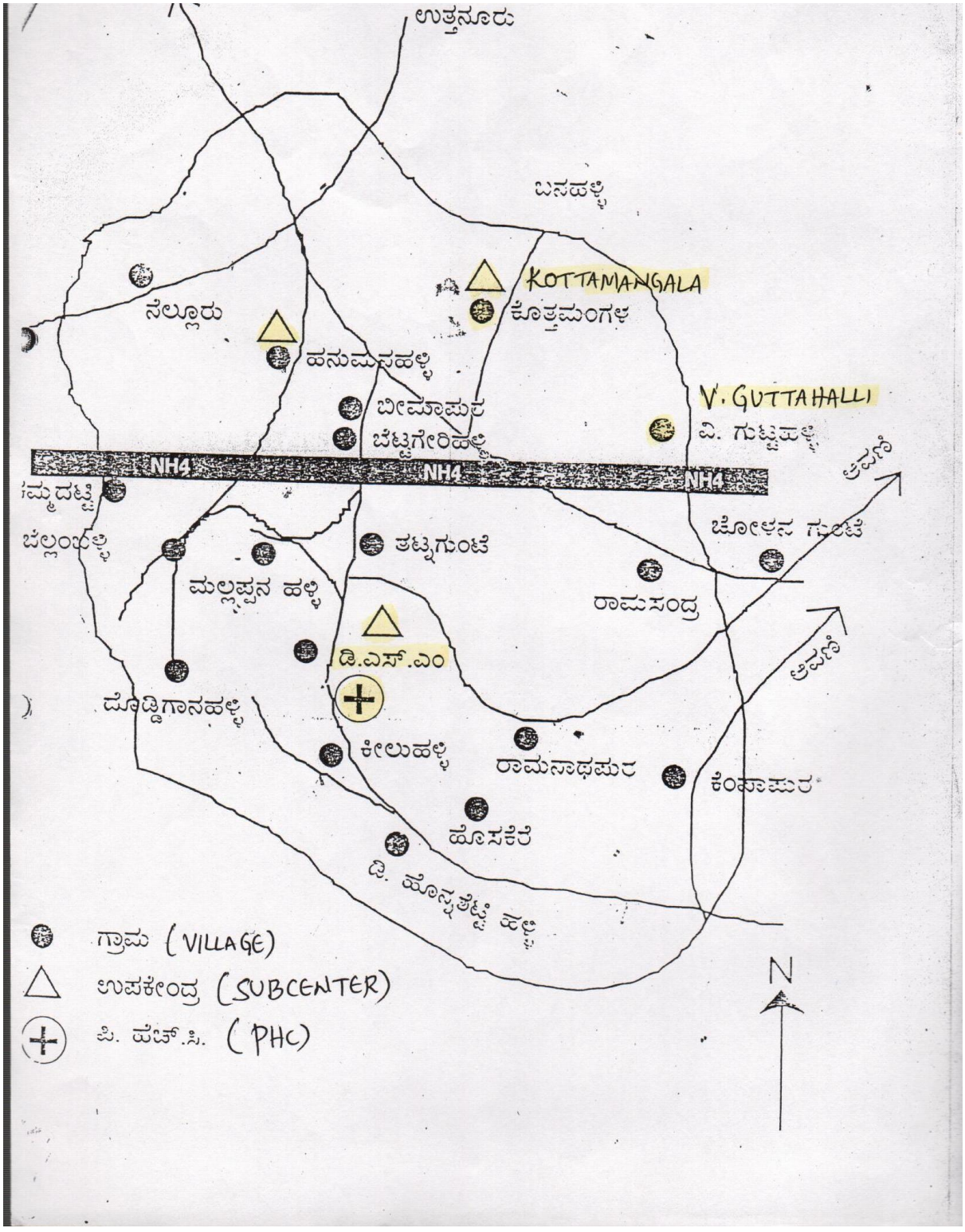
Thanking you,

Yours faithfully,

Signature of the participant
(Radha M.S.)

ANNEXURE 3

AREA MAP OF PHC, DEVARAYASAMUDRA



ANNEXURE 4

KANNADA TRANSLATION CERTIFICATE

I hereby certify that I have translated the content related to the Growth and Development Patterns Knowledge, Attitude, and Practice Questionnaire Tool and Self Instructional Module from English to Kannada and retranslated to English, of Mrs. Radha. M.S, Ph.D (N) Scholar who is undertaking a study on, **"Effectiveness of Self Instructional Module on the Knowledge, Attitude and Practices of Mothers regarding Growth and Development and Patterns of Growth and Development among Underfives in a Selected PHC of Kolar District, Karnataka"** at Vinayaka Mission University, Salem.

Date: 12-12-2009
Place: Kolar.

Signature of the Translator

H.E. RAVIKUMAR, M.A.,B.Ed.,
Assistant Professor
Dept. of Kannada
Govt. Boys College
KOLAR - 563 101.

ANNEXURE 5

TOOL-1

STRUCTURED KNOWLEDGE QUESTIONNAIRE

SECTION-A

DEMOGRAPHIC DATA OF THE MOTHER AND UNDERFIVE CHILD

This section seeks information on demographic data of the mother and child. The investigator pose the question to the participant and elicits response one by one and put tick mark ( ) against the response, given by the participant.

Code No:

1. **Age of the Mother:**
   1.1.< 18 years
   1.2.18-27 years
   1.3.28-37 years
   1.4.38 and above

2. **Education:**
   2.1.Graduate
   2.2.PUC
   2.3.Higher School
   2.4.Higher Primary
   2.5.Primary School

3. **Occupation:**
   3.1.Government Employee
   3.2.Private Employee
   3.3.House wife

4. **Family Income (in Rs/-month):**
   4.1.<3,500/-
   4.2.3,501-4,500/-
   4.3.4,501-5,500/-
   4.4.>5,501/-

5. **Type of family:**
   5.1.Nuclear
   5.2.Joint
   5.3.Extended

6. **Religion:**
   6.1.Hindu
   6.2.Muslim
   6.3.Christian
   6.4.Others: specify----------

7. **Number of Children:**
   7.1.One
   7.2.Two
   7.3.>two

8. **Source of information:**
   8.1.Television/Radio
   8.2.Newspaper/Magazine
   8.3.Friends/relatives
   8.4.Health Professional

9. **Age of the Underfive Child:**
   9.1.Birth-1year
   9.2.1 yr 1 mon-2 yrs
   9.3.2yrs 1 mons – 3 yrs
   9.4.3yrs 1 mons – 4 yrs
   9.5.4 yrs 1 mons – 5 yrs

10. **Gender:**
    10.1. Male
    10.2. Female

11. **Height of the Child**:----------

12. **Weight of the Child**:----------

SECTION-B

STRUCTURED QUESTIONNAIRE ON KNOWLEDGE OF MOTHERS REGARDING GROWTH AND DEVELOPMENT OF UNDERFIVE CHILDREN

Instructions: Dear participants, kindly read the questions and put (√) mark for the correct answer in the space provided

PART-I- MEANING AND FACTORS INFLUENCING GROWTH AND DEVELOPMENT

1. Growth means
a. Increase in size and maturation of various organs of the body
b .Increase in size
c. maturation of various organs of the body
d. None

2. Development means
a. Progressive increase in skill and capacity to function
b. Increase in skill
c. Increased capacity to function
d. Maturation

3. What all factors influence the growth and development of children?
a. Heredity and environment
b. Health and Nutrition
c. Both a and b
d. None of the above

PART-II: GROSS MOTOR DEVELOPMENT

1. By what age child can roll over?
a. 2 months
b. 4 months
c. 6 months
d. 8 months

2. By what age child can hold head steady when sitting?
a. 3 months
b. 6 months
c. 9 months
d.12 months

3.By what age child can crawl and creep?
a. 3months
b. 6 months
c. 9 months
d. 12 months

4.By what age child can stand with support?
a. 6 months
b. 10 months

c. 14 months
d. 18 months

5.By what age child can walk without help?
a. 12 months
b. 15 months
c. 19 months
d. 24 months

6.By what age child can walk up and down stairs alone with both feet on each step?
a. 1 year
b. 1½ years
c. 2 years
d. 2 ½ years

7.By what age child can pedal a tri-cycle?
a. 2 years
b. 3 years
c. 4years
d. 5 years

8.By what age child can climb playground equipments?
a. 2 years
b. 3 years
c. 4 years
d. 5 years

PART-III: FINE MOTOR DEVELOPMENT

1. By what age child carry an object or hand to the mouth?

a. 3 months
b. 6 months
c. 9 months
d. 12 months

2.By what age child can play with a rattle?
a. 7 months
b. 10 months
c. 13 months
d. 16 months

3. By what age child can transfer object from one hand to the other?
a. 7 months
b. 10 months
c. 13 months
d. 16 months

4.By what age child can eat with thumb and finger?
a. 10 months
b. 12 months
c. 15 months
d. 20 months

5.By what age child can drink from a cup with help?

a. 1 year
b. 2 years
c. 3 years
d. 4 years

6.By what age child can remove simple garments?

a. 1 ½ years
b. 2 years
c. 4 years
d. 5 years

7. By what age child can copy a circle?

a. 3 years
b. 4 years
c. 5 years
d. 6 years

8.By what age child can brush its teeth with help?

a. 2 years
b. 3 years
c. 4 years
d. 5 years

9. By what age child can tie its shoelaces?

a. 3 years
b. 4 years
c. 5 years
d. 6 years

10.By what age child can copy a diamond, triangle or letter?

a. 4 years
b. 5 years
c. 6 years
d. 7 years

PART-IV: LANGUAGE DEVELOPMENT

1.By what age child can respond to his name?

a. 3 months
b. 5 months
c. 10 months
d. 12 months

2.By what age child vocalizes chained syllables-baba, dada, and kaka?

a. 4 months
b. 10 months

c. 12 months
d. 2 years

3.By what age child imitates speech sounds?

a. 4 months
b. 6 months
c. 9 months
d. 12 months

4.By what age child understands simple directions- come, go?

a. 6 months
b. 11 months
c. 1 ½ years
d. 2 years

5.By what age child imitates animal sounds?

a. 1 year
b. 1 ½ years
c. 2 years
d. 2 ½ years

6.By what age child shakes head to communicate "no"?

a. 1 year
b. 1year 3 months
c. 2 years
d. 3 years

7.By what age child points to body parts?

a. 1 year
b. 1 ½ years
c. 2 years
d. 3 years

8.By what age child recognizes colors?

a. 2 ½ years
b. 3 ½ years
c. 4 ½ years
d. 5 ½ years

PART-V: SOCIAL DEVELOPMENT

1.By what age child shows social smile?

a. 3 months
b. 5 months
c. 9 months
d. 12 months

2.By what age child shows fear of strangers?

a. 4 months
b. 7 months

c. 12 months
d. 1 year

3.By what age child waves bye-bye?

a. 5 months
b. 10 months
c. 1 year
d. 2 years

4.By what age child imitates parent's domestic activities?

a. 1 ½ years
b. 2 years
c. 3 years
d. 4 years

5.By what age child shows awareness of ownership?

a. 1 year
b. 1 ½ years
c. 2 years
d. 2 ½ years

6.By what age child separates easily from mother?

a. 1 year
b. 2 years
c. 2 ½ years
d. 3 years

7.By what age child shows jealousy of siblings?

a. 4 years
b. 5 years
c. 6 years
d. 7 years

PART-VI: PHYSICAL GROWTH

1. By what age anterior fontanel closes?

a. 1year
b. 1 ½ years
c. 2 years
d. 2 ½ years

2. By what age child will have Sphincter control?

a. 1 year
b. 1 ½ years
c. 2 years
d. 2 ½ years

3. By what age child will have approximately 16 temporary teeth?
a. 1½ years
b. 2 years
c. 2 ½ years
d. 3 years

4. By what age child remains dry during day time?
    a. 2 years
    b. 2 ½ years
    c. 3 years
    d. 3 ½ years

5. By what age child will have 20 temporary teeth?
    a. 2 years
    b. 2 ½ years
    c. 3 years
    d. 3 ½ years

PART-VII: SEXUAL DEVELOPMENT

1. By what age child obtains pleasure in urinating and defecating?
a. 1 year
b. 1½ years
c. 2 years
d. 2 ½ years

2. By what age child identifies their own sex?
a. 1½ years
b. 2 years
c. 2 ½ years
d. 3 years

3. By what age child can indicate the act of passing urine during day time?
a. 2years
b. 2 ½ years
c. 3 years
d. 3 ½ years

4. By what age child can indicate the act of passing urine during night time?
a. 2 ½ years
b. 3 years
c. 3 ½ years
d. 4 years

5. By what age child can indicate the act of passing stool?

a. 2years
b. 2 ½ years
c. 3 years
d. 3 ½ years

PART-VIII: SPIRITUAL DEVELOPMENT

1. By what age child imitates religious behavior such as bowing head in prayer?

a. 1 year
b. 1 ½ years
c. 2 years
d. 2 ½ years

2. By what age child participates in family religious activities?

a. 2 ½ years
b. 3 years
c. 3 ½ years
d. 4 years

PART-IX: COGNITIVE DEVELOPMENT

1. By what age child can understand past, present and future?
    a. 1 ½ years
    b. 2 years
    c. 2 ½ years
    d. 3 years

2. By what age child can say morning and evening?

a. 2 years
b. 2 ½ years
c. 3 years
d. 3 ½ years

3. By what age child can understand size, shape and length?

a. 3 years
b. 3 ½ years
c. 4 years
d. 4½ years

4. By what age child can count to 5?
    a. 2-3 years
    b. 3-4 years
    c. 4-5 years
    d. 5-6 years

5. By what age child can tell you their street and town?
    a. 2-3 years
    b. 3-4 years
    c. 4-5 years
    d. 5-6 years

PART-X: MORAL DEVELOPMENT

1. By what age child can talk about good and bad?

a. 1 year
b. 1 ½ years
c. 2 years
d. 2 ½ years

2. By what age child understands the punishment for wrong doing?

1 ½ years

2 years

2 ½ years

3 years

3. By what age child understands rules and regulations and follow instructions strictly?

a. 2 years
b. 2 ½ years
c. 3 years
d. 4 years

PART-XI - PLAY, NUTRITION AND ANTICIPATORY GUIDANCE

1. Toys to be given to the child to play from birth to 6 months, are EXCEPT?

a. Rattles
b.Soft toys with contrasting colours
c.moving legs and arms while singing and talking
d.Marbles

2. Toys to be given to the child to play from 6 months to 1 year, are EXCEPT?

a.Large blocks
b.Push and pull toys
c. objects that fit into one another
d.toys with loose parts

3.Toys to be given to the child to play from 1 year to 3 years, are EXCEPT?

a. Kitchen set and toy phone
b. Tricycle and ball and bat
c. Wooden puzzles , pencil and paper
d. Sharp and penetrating objects

4. Toys to be given to the child to play from 3 years to 5 years, are EXCEPT?

a. Dolls and doll clothes
b. pen, paper, glue and scissors
c. songs and story books
d. crackers

5.Exclusive breast feeding should be given till what age?

a. 4 months
b. 6 months
c. 8 months
d. 10 months

6.Rice cereal can be given to the child at what age?

a. 6 months
b. 8 months
c. 10 months
d. 1 year

7.Fruits or vegetables can be given to the child at what age?

a. 6-8 months
b. 10 months
c. 1 year
d. 1½ years

8.How many meals and what type of food to be given to the child between 1year to 5 years?

a. three meals and two snacks with variety of nutritious foods
b. two meals and one snack with child choice of food
c. two meals with more of milk
d. three meals with more of milk

9.What are the common accidental hazards from birth to one year?

a. Falls, burns and drowning
b. poisoning, choking and suffocation
c. both a and b
d. none

10.Preventive measures to prevent accidental hazards from birth to one year, includes all EXCEPT?

a. Do not leave the child alone and unsecured
b. Keep medicines and electrical outlets out of reach

c. Check temperature of bath water and food
d. Allowing the child to play under the supervision of elder sibling

11.What are the common accidental hazards from 1 year to 3 years?

a. Falls, poisoning and Burns
b. Motor vehicle accidents and drowning
c. both a and b
d. none

12.What are the preventive measures to prevent accidental hazards from 1 year to 3 years?

a. Play under supervision and insist to follow safety precautions
b. Keeping medicines and other poisonous materials locked
c. both a and b
d. none

13. What are the common accidental hazards from 3 years to 5 years?

a. Motor vehicle and pedestrian accidents
b. Burns and drowning
c. both a and b
d. none

13. What are the preventive measures to prevent accidental hazards from 3 years to 5 years?

a. Teach child road safety
b. Teach child safety precautions near water and fire
c. both a and b
d. none

ANSWER KEY

Sl.No	Answer	Sl.No	Answer	Sl.No	Answer	Sl.No	Answer
Part-I		9.	b	**Part-VI**		**Part-X**	
1.	a	10.	b	1.	b	1.	c
2.	a	**Part-IV**		2.	d	**2.**	**c**
3.	b	1.	b	3.	b	3.	d
Part-II		2.	d	4.	b	**Part-XI**	
1.	b	3.	c	5	b	1.	d
2.	c	4.	c	**Part-VII**		2.	d
3.	c	5.	d	1.	c	3.	d
4.	c	6.	b	2.	b	4.	d
5.	c	7.	c	3.	a	5.	b
6	a	8.	a	4.	b	6.	a
7.	a	-	-	5.	b	7.	a
8.	b	-	-	**Part-VIII**		8.	a
Part-III		-	-	1.	c	9.	c
1.	b	**Part-V**		2.	d	10.	d
2.	a	1.	b	-	-	11.	c
3.	c	2.	a	**Part-IX**		12.	c
4.	a	3.	c	1.	a	13.	c
5.	a	4.	b	2.	d	14.	c
6.	a	5.	a	3.	d		
7.	a	6.	b	4.	c		
8.	b	7.	a	5.	d		

ಐದು ವರ್ಷದ ಕೆಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಬಗ್ಗೆ ತಾಯಿಯರ ತಿಳುವಳಿಕೆ, ಮನೋವೃತ್ತಿ ಮತ್ತು ಕಾರ್ಯ ಪ್ರವೃತ್ತಿಗಳ, ಅಳತೆಯ ಸಂದರ್ಶನ ಸ್ವರೂಪದ ಪಟ್ಟಿ

ವಿಭಾಗ –ಎ

ತಾಯಿ ಮತ್ತು ಮಗುವಿನ ಬಗ್ಗೆ ಮಾಹಿತಿ

ಸಂದರ್ಶನಕಾರರು ತಮ್ಮನ್ನು ಪರಿಚಯಿಸುತ್ತಾ ಅಧ್ಯಯನದ ಉದ್ದೇಶವನ್ನು ವಿವರಿಸುತ್ತಾರೆ ನಂತರ ಪಟ್ಟಿ ಮಾಡಿದ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಿ ಬಾಗವಹಿಸುವವರು ನೀಡಿದ ಉತ್ತರಗಳನ್ನು (√) ಗುರುತು ಹಾಕುವರು.

ಸಂಕೇತ ಸಂಖ್ಯೆ: _____

1. ತಾಯಿಯ ವಯಸ್ಸು ವರ್ಷಗಳಲ್ಲಿ.
   - ಅ. <18 ವರ್ಷ
   - ಆ. 18–27 ವರ್ಷ
   - ಇ. 28–37 ವರ್ಷ
   - ಈ. 38 ಮತ್ತು ಮೇಲ್ಪಟ್ಟವರು.
2. ತಾಯಿಯ ವಿದ್ಯಾರ್ಹತೆ:
   - ಅ. ವೃತ್ತಿ ಪರ
   - ಆ. ಪದವಿ
   - ಇ. ಪದವಿ ಪೂರ್ವ (ಪಿ.ಯು.ಸಿ)೧
   - ಈ. ಪ್ರೌಢ ಶಾಲೆ
   - ಉ. ಮಾಧ್ಯಮಿಕ ಶಾಲೆ
   - ಊ. ಪ್ರಾಥಮಿಕ ಶಾಲೆ
   - ಋ. ಅನಕ್ಷರಸ್ಥೆ
3. ಉದ್ಯೋಗ
   - ಅ. ಸರ್ಕಾರಿ ಉದ್ಯೋಗಿ
   - ಆ. ಖಾಸಗಿ ಉದ್ಯೋಗಿ
   - ಇ. ಗೃಹಿಣಿ
4. ಕುಟುಂಬ ಮಾಸಿಕ ಆದಾಯ
   - ಅ. 3,500/-
   - ಆ. 3,501/- to 4,500/-
   - ಇ. 4,500/- to 5,500/-
   - ಈ. 5,500/- ಕಿಂತ ಹೆಚ್ಚು
5. ಕುಟುಂಬದ ನಮೂನೆ
   - ಅ. ಆಧುನಿಕ ಕುಟುಂಬ
   - ಆ. ಸಂಯುಕ್ತ ಕುಟುಂಬ
   - ಇ. ವಿಸ್ತರಿಸಿದ ಕುಟುಂಬ
6. ಜಾತಿ
   - ಅ. ಹಿಂದು
   - ಆ. ಮುಸ್ಲಿಮರು
   - ಇ. ಕ್ರೈಸ್ತರು
   - ಈ. ಇತರೆ
7. ಒಟ್ಟು ಮಕ್ಕಳು
   - ಅ. ಒಂದು
   - ಆ. ಎರಡು
   - ಇ. >ಎರಡು
8. ಮಾಹಿತಿ ಸಂಗ್ರಹಣೆಯ ಸಮಯದಲ್ಲಿ ಮಗುವಿನ ವಯಸ್ಸು
   - ಅ. ಹುಟ್ಟಿದಾಗಿನಿಂದ - ಒಂದು ವರ್ಷ
   - ಆ. ಒಂದು ವರ್ಷ, 1 ತಿಂಗಳು – 2 ವರ್ಷ
   - ಇ. 2 ವರ್ಷ, 1 ತಿಂಗಳು –3 ವರ್ಷ
   - ಈ. 3ವರ್ಷ, 1 ತಿಂಗಳು - 4 ವರ್ಷ
   - ಉ. 4 ವರ್ಷ, 1 ತಿಂಗಳು –5 ವರ್ಷ
9. ಆರು ತಿಂಗಳ ಒಳಗೆ ಬೆಳವಣಿಗೆಯ ಬಗ್ಗೆ ಮಾಹಿತಿ
   - ಅ. ದೂರದರ್ಶನ/ಆಕಾಶವಾಣಿ
   - ಆ. ದಿನಪತ್ರಿಕೆ/ನಿಯತಕಾಲಿಕೆ
   - ಇ. ಸ್ನೇಹಿತರು/ಬಂಧುಗಳು
   - ಈ. ಆರೋಗ್ಯ ಕಾರ್ಯಕರ್ತರು.
10) ಮಗುವಿನ ಲಿಂಗ:
   ಅ. ಗಂಡು
   ಆ. ಹೆಣ್ಣು
11. ಮಗುವಿನ ತೂಕ _____
12. ಮಗುವಿನ ಎತ್ತರ _____

ವಿಭಾಗ–ಬಿ

ಐದು ವರ್ಷದ ಕೆಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಬಗ್ಗೆ ತಾಯಿಯರ ತಿಳುವಳಿಕೆ ಸಂದರ್ಶನ ಸ್ವರೂಪದ ಪಟ್ಟಿ

I: ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಅರ್ಥ ಮತ್ತು ಪ್ರಭಾವ ಬೀರುವ ಅಂಶಗಳ ಬಗ್ಗೆ

1. ಬೆಳವಣಿಗೆ ಎಂದರೆ.
   - ಅ. ದೇಹದ ಗಾತ್ರ ಮತ್ತು ವಿವಿಧ ಅಂಗಗಳ ವಿಸ್ತಾರ.
   - ಆ. ದೇಹದ ಗಾತ್ರ ಮಾತ್ರ ಹೆಚ್ಚಾಗುವುದು.
   - ಇ. ದೇಹದ ವಿವಿಧ ಅಂಗಗಳ ಬೆಳವಣಿಗೆಯ ವಿಸ್ತಾರ.
   - ಈ. ದೇಹದ ವೃದ್ಧಿ ಮಾತ್ರ ಹೆಚ್ಚಾಗುವುದು.
2. ವೃದ್ಧಿ ಎಂದರೆ ಈ ಕೆಳಗಿನವುಗಳು ಹಂತ ಹಂತವಾಗಿ ಹೆಚ್ಚಾಗುವುದು
   - ಅ. ಕೈಚಳಕ ಮತ್ತು ಕೆಲಸ ಕಾರ್ಯಗಳನ್ನು ಮಾಡುವ ಸಾಮರ್ಥ್ಯದಲ್ಲಿ
   - ಆ. ಕೈಚಳಕದಲ್ಲಿ ಮಾತ್ರ
   - ಇ. ಕೆಲಸ ಕಾರ್ಯಗಳನ್ನು ಮಾಡುವ ಸಾಮರ್ಥ್ಯದಲ್ಲಿ ಮಾತ್ರ
   - ಈ. ಪರಿಪಕ್ವವಾಗುವುದು.
3. ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರುವ ಅಂಶಗಳು.
   - ಅ. ತಾಯಿ ಮತ್ತು ಮಗು
   - ಆ. ಅನುವಂಶಿಯತೆ, ಪರಿಸರ, ಆರೋಗ್ಯ ಮತ್ತು ಪೌಷ್ಟಿಕತೆ
   - ಇ. ತಾಯಿ ಮಾತ್ರ,
   - ಈ. ಮಗು ಮಾತ್ರ,

II ಅಸಂಸ್ಕೃತ ಚಲನಾವದ್ಧಿ:

1. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಕುಳ್ಳರಿಸಿದಾಗ ತಲೆ ನೆಟ್ಟಗೆ ಇಟ್ಟುಕೊಳ್ಳುತ್ತದೆ?
   ಅ. 3 ತಿಂಗಳು ಆ. 6ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12ತಿಂಗಳು
2. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ಬೋರಲು ಬೀಳುತ್ತದೆ?
   ಅ. 2 ತಿಂಗಳು ಆ. 3 ತಿಂಗಳು ಇ. 6 ತಿಂಗಳು ಈ. 8ತಿಂಗಳು
3. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ಸಹಾಯವಿಲ್ಲದೆ ಕುಳಿತುಕೊಳ್ಳುತ್ತದೆ?
   ಅ. 3 ತಿಂಗಳು ಆ. 6ತಿಂಗಳು ಇ. 8 ತಿಂಗಳು ಈ. 10ತಿಂಗಳು
4. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ತೆವಳುತ್ತದೆ?
   ಅ. 3 ತಿಂಗಳು ಆ. 6ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು
5. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ಸಹಾಯವಿಲ್ಲದೆ ನಡೆಯುತ್ತದೆ?
   ಅ. 12 ತಿಂಗಳುಆ. 15ತಿಂಗಳು ಇ. 19 ತಿಂಗಳು ಈ. 24ತಿಂಗಳು
6. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ಒಂದೊಂದು ಮೆಟ್ಟಿಲಮೇಲೆ ಎರಡೂಕಾಲು ಇಟ್ಟು ಮೇಲೆ ನಡೆಯುತ್ತದೆ?
   ಅ. 1 ವರ್ಷ ಆ. 1½ ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2½ ವರ್ಷ
7. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ಒಂದೊಂದು ಮೆಟ್ಟಿಲಮೇಲೆ ಒದೊಂದು ಕಾಲು ಇಟ್ಟು ಮೇಲೆ ಕೆಳಗೆ ನಡೆಯುತ್ತದೆ?
   ಅ. 2 ವರ್ಷ ಆ. 2½ ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. 3½ ವರ್ಷ
8. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗು ನೃತ್ಯವನ್ನು ಅನುಕರಣೆ ಮಾಡುತ್ತದೆ?
   ಅ. 2 ವರ್ಷ ಆ.3ವರ್ಷ ಇ. 4 ವರ್ಷ ಈ. 5 ವರ್ಷ.

III ಸಂಸ್ಕೃತ ಚಲನಾವೃದ್ಧಿ:

1. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಕೈ ಅಥವಾ ವಸ್ತುವನ್ನು ಬಾಯಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗುತ್ತದೆ?
   ಅ. 3 ತಿಂಗಳು ಆ. 6ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು
2. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಎರಡೂ ಕೈಗಳಿಂದ ವಸ್ತುವನ್ನು ಹಿಡಿದುಕೊಳ್ಳುತ್ತದೆ?
   ಅ. 4 ತಿಂಗಳು ಆ. 8ತಿಂಗಳು ಇ. 12 ತಿಂಗಳು ಈ. 15 ತಿಂಗಳು
3. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತನ್ನ ಕಾಲ್ಬೆರಳುಗಳಿಂದ ಆಟವಾಡುತ್ತದೆ?

ಅ. 3 ತಿಂಗಳು ಆ. 5ತಿಂಗಳು ಇ. 8 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

4. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಹೆಬ್ಬೆರಳು ಮತ್ತು ತೋರ್ಬೆರಳಿನ ಸಹಾಯದಿಂದ ತಿನ್ನುತ್ತದೆ?

ಅ. 10 ತಿಂಗಳು ಆ. 12ತಿಂಗಳು ಇ.15 ತಿಂಗಳು ಈ. 20 ತಿಂಗಳು

5. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಪೆನ್ಸಿಲ್‌ನಿಂದ ಗೀಚಬಲ್ಲದು?

ಅ. 1 ವರ್ಷ 3 ತಿಂಗಳು ಆ. 2ವರ್ಷ ಇ. 2½ವರ್ಷ ಈ. 3 ವರ್ಷ

6. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತನ್ನ ಸರಳ ಬಟ್ಟೆಗಳನ್ನು ಕಳಚಬಹುದು?

ಅ. 1½ ವರ್ಷ ಆ. 2ವರ್ಷ ಇ. 4 ವರ್ಷ ಈ. 5 ವರ್ಷ

7. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಊಟ ಮಾಡಲು ಚಮಚ ಬಳಸುತ್ತದೆ ?

ಅ. 2 ವರ್ಷ ಆ. 2½ವರ್ಷ ಇ. 3½ ವರ್ಷ ಈ. 4 ವರ್ಷ

8. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಬ್ರಷ್ ಉಪಯೋಗಿಸಿ, ಸಹಾಯದಿಂದ ಹಲ್ಲನ್ನು ಉಜ್ಜಬಲ್ಲದು ?

ಅ. 2 ವರ್ಷ ಆ. 3ವರ್ಷ ಇ. 4 ವರ್ಷ ಈ. 5 ವರ್ಷ

9. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತನ್ನ ಶೂ ಲೇಸ್ ಕಟ್ಟಿಕೊಳ್ಳಬಹುದು ?

ಅ. 2 ವರ್ಷ ಆ. 4ವರ್ಷ ಇ. 5 ವರ್ಷ ಈ. 6 ವರ್ಷ

10. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಪೆನ್ಸಿಲ್‌ನ್ನು ಚೆನ್ನಾಗಿ ಬಳಸಬಲ್ಲದು ?

ಅ. 4 ವರ್ಷ ಆ. 5 ವರ್ಷ ಇ. 6 ವರ್ಷ ಈ. 7 ವರ್ಷ

IV ಭಾಷಾ ಪದ್ಧತಿ ವೃದ್ಧಿಯ ಬಗ್ಗೆ.

1. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಕೂ ಅಥವಾ ಸಂತೋಷದ ಧ್ವನಿಗಳನ್ನು ಹೊರಡಿಸುತ್ತದೆ?

ಅ. 3 ತಿಂಗಳು ಆ. 6 ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

2.ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತನ್ನ ಹೆಸರಿಗೆ ಪ್ರತಿಕ್ರಿಯಿಸುತ್ತದೆ?

ಅ. 3 ತಿಂಗಳು ಆ. 6 ತಿಂಗಳು ಇ. 10 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

3.ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಒಂದಕ್ಷರದ ಧ್ವನಿ ಮ. ದ. ಎಂದು ಮಾತಾಡುತ್ತದೆ?

ಅ. 4 ತಿಂಗಳು ಆ. 7ತಿಂಗಳು ಇ. 10 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

4. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಮಾತನಾಡುವುದನ್ನು ಅನುಕರಿಸಬಲ್ಲದು?

ಅ. 4 ತಿಂಗಳು ಆ. 6 ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

5. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಸರಳ ಮಾತುಗಳನ್ನು –ಬಾ, ಹೋಗು – ಅರ್ಥಮಾಡಿಕೊಳ್ಳುತ್ತದೆ?

ಅ. 6 ತಿಂಗಳು ಆ. 11 ತಿಂಗಳು ಇ. 1½ ವರ್ಷ ಈ. 2 ವರ್ಷ

6. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಪ್ರಾಣಿಗಳ ಧ್ವನಿಯನ್ನು ಅನುಕರಣೆ ಮಾಡುತ್ತದೆ?

ಅ. . 1ವರ್ಷ ಆ. . 1½ ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. . 2½ ವರ್ಷ

7. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು 'ಇಲ್ಲ' ಎಂದು ತಿಳಿಸಲು ತಲೆಯಾಡಿಸುತ್ತದೆ ?

ಅ. 1ವರ್ಷ ಆ. . 1 ವರ್ಷ 3 ತಿಂಗಳು ಇ. 2 ವರ್ಷ ಈ. . 3 ವರ್ಷ

8. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ದೇಹದ ಭಾಗಗಳನ್ನು ಗುರುತಿಸಬಲ್ಲದು?

ಅ. 1ವರ್ಷ ಆ. . 1 ½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. . 3 ವರ್ಷ

9. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಪೂರ್ಣ ವಾಕ್ಯವನ್ನು ಬಳಸಬಲ್ಲದು ?

ಅ. 1ವರ್ಷ ಆ. . 2ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. . 4 ವರ್ಷ

10. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಬಣ್ಣಗಳನ್ನು ಗರುತಿಸಬಲ್ಲದು ?

ಅ. 2½ ವರ್ಷ ಆ. 3½ ವರ್ಷ ಇ. 4½ ವರ್ಷ ಈ. 5½ ವರ್ಷ

V ಸಾಮಾಜಿಕ ವೃದ್ಧಿಯ ಬಗ್ಗೆ:

1. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಮುಖವನ್ನು ದಿಟ್ಟಿಸಿ ನೋಡುತ್ತದೆ?

ಅ. 2 ತಿಂಗಳು ಆ. 5 ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು

2. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ನಗುವನ್ನು ಪ್ರತಿಕ್ರಿಯಿಸುತ್ತದೆ?
ಅ. 3 ತಿಂಗಳು ಆ. 5 ತಿಂಗಳು ಇ. 9 ತಿಂಗಳು ಈ. 12 ತಿಂಗಳು
3. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಹೊಸಬರನ್ನು ಗುರುತಿಸುತ್ತದೆ?
ಅ. 4 ತಿಂಗಳು ಆ. 7 ತಿಂಗಳು ಇ. 12 ತಿಂಗಳು ಈ. 1ವರ್ಷ
4. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಟಾ-ಟಾ ಎಂದು ಕೈಯಾಡಿಸುತ್ತದೆ?
ಅ. 5 ತಿಂಗಳು ಆ. 10 ತಿಂಗಳು ಇ. 1ವರ್ಷ ಈ. 2ವರ್ಷ
5. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತಾಯಿ ತಂದೆಯರ ಮೆನೆಕೆಲಸಗಳನ್ನು ಅನುಕರಣೆ ಮಾಡುತ್ತದೆ?
ಅ. 1½ವರ್ಷ ಆ. . 2ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. . 4 ವರ್ಷ
6. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತಾಯಿಯಿಂದ ಸುಲಭವಾಗಿ ಬೇರ್ಪಡುತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 2ವರ್ಷ ಇ. 2 ½ ವರ್ಷ ಈ. . 3 ವರ್ಷ
7. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಸಹೋದರರ ಮೇಲೆ ಹೊಟ್ಟಿಕಿಚ್ಚು ತೋರಿಸುತ್ತದೆ ?
ಅ. 4ವರ್ಷ ಆ. 5ವರ್ಷ ಇ. 6 ವರ್ಷ ಈ. 7 ವರ್ಷ

VI ಭೌತಿಕ ಬೆಳವಣಿಗೆ ಬಗ್ಗೆ :

1. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವಿನ ತಲೆಯ ಮುಂದಿನ ಸುಡಿ ಮುಚ್ಚಿಕೊಳ್ಳುತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 1½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2 ½ ವರ್ಷ
2. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಮೂತ್ರ ವಿಸರ್ಜನೆ ಕಾರ್ಯದಲ್ಲಿ ಹತೋಟಿಯನ್ನು ಪಡೆಯುತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 1½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2 ½ ವರ್ಷ
3. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಸುಮಾರು 16 ಹಾಲು ಹಲ್ಲುಗಳನ್ನು ಹೊಂದಿರುತ್ತದೆ?
ಅ. 1½ವರ್ಷ ಆ. 2ವರ್ಷ ಇ. 2 ½ವರ್ಷ ಈ. 3ವರ್ಷ
4. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಹಗಲಿನಲ್ಲಿ ಮೂತ್ರವಿಸರ್ಜನೆ ಮಾಡಲು ಒತ್ತಾಯಿಸುತ್ತದೆ?
ಅ. 2 ವರ್ಷ ಆ. 2 ½ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. 3½ವರ್ಷ

VII ಲೈಂಗಿಕ ವೃದ್ದಿಯ ಬಗ್ಗೆ

1. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ಮೂತ್ರ ಮತ್ತು ಮಲ ವಿಸರ್ಜನೆಯ ನಂತರ ಹಿತಕರ ಅನುಭವನ್ನು ಪಡೆಯತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 1½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2 ½ ವರ್ಷ
2. ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ ಮಗುವು ತನ್ನ ಲಿಂಗವನ್ನು ಗುರ್ತಿಸುತ್ತದೆ?
ಅ. 1½ವರ್ಷ ಆ. 2 ವರ್ಷ ಇ. 2 ½ವರ್ಷ ಈ. 3 ವರ್ಷ
3. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಹಗಲಿನಲ್ಲಿ ಮೂತ್ರ ವಿಸರ್ಜನೆಯ ಕಾರ್ಯವನ್ನು ಸೂಚಿಸುತ್ತದೆ?
ಅ. 2 ವರ್ಷ ಆ. 2 ½ ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. 3½ವರ್ಷ
4. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ರಾತ್ರಿಯಲ್ಲಿ ಮೂತ್ರ ವಿಸರ್ಜನೆಯ ಕಾರ್ಯವನ್ನು ಸೂಚಿಸುತ್ತದೆ?
ಅ. 2 ½ವರ್ಷ ಆ. 3 ವರ್ಷ ಇ. 3½ ವರ್ಷ ಈ. 4 ವರ್ಷ
5. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಮಲ ವಿಸರ್ಜನೆಯ ಕಾರ್ಯವನ್ನು ಸೂಚಿಸುತ್ತದೆ?
ಅ. 2 ವರ್ಷ ಆ. 2 ½ ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. 3½ವರ್ಷ

VIII ಧಾರ್ಮಿಕ ಮತ್ತು ನೈತಿಕ(ನೀತಿ) ವೃದ್ದಿಯ ಬಗ್ಗೆ

1. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಮತಕ್ಕನುಗುಣವಾದ ಪ್ರಾರ್ಥನೆಯ ನಡವಳಿಕೆಯನ್ನು ಅಂದರೆ ಕೈಮುಗಿಯುವುದು, ತಲೆಬಾಗುವುದು ಮುಂತಾದವುದನ್ನು ಅನುಕರಣೆ ಮಾಡುತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 1½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2 ½ ವರ್ಷ
2. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಸರಿ ಮತ್ತು ತಪ್ಪುಗಳ ಬಗ್ಗೆ ಮಾತಾಡುತ್ತದೆ?
ಅ. 1ವರ್ಷ ಆ. 1½ವರ್ಷ ಇ. 2 ವರ್ಷ ಈ. 2 ½ ವರ್ಷ
3. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ತಪ್ಪು ಮಾಡಿದಾಗ ದಂಡಿಸುವುದನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುತ್ತದೆ?
ಅ. 1½ವರ್ಷ ಆ. 2 ವರ್ಷ ಇ. 2 ½ ವರ್ಷ ಈ. 3ವರ್ಷ

IX ಜ್ಞಾನ ವೃದ್ಧಿಯ ಬಗ್ಗೆ

1. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಪರಿಚಿತ ಶಬ್ದಗಳಿಗೆ ಪ್ರತಿಕ್ರಿಯೆ ತೋರಿಸುತ್ತದೆ?
   ಅ. 3-6 ತಿಂಗಳು ಆ. 4-7 ತಿಂಗಳು ಇ. 5-8 ತಿಂಗಳು ಈ. 6-9ತಿಂಗಳು

2. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ನಾನು ಮತ್ತು ನೀನುಗಳ ಮಧ್ಯೆ ವ್ಯತ್ಯಾಸ ಕಾಣುತ್ತದೆ?
   ಅ. 6-9 ತಿಂಗಳು ಆ. 9-12ತಿಂಗಳು ಇ. 1-2 ವರ್ಷ ಈ. 2-3ವರ್ಷ

3. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಒಂದೇ ಚಿತ್ರದಲ್ಲಿ ಅಡಗಿರುವ ವಿವಿಧ ವಸ್ತುಗಳನ್ನು ಗುರುತಿಸಬಲ್ಲದು?
   ಅ.1-2 ವರ್ಷ ಆ. 2-3 ವರ್ಷ ಇ. 3-4 ವರ್ಷ ಈ. 4-5ವರ್ಷ

4. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಮಾತಾಡಲು ಚಿಹ್ನೆಗಳನ್ನು ಉಪಯೋಗಿಸಬಲ್ಲದು?
   ಅ. 1½ವರ್ಷ ಆ. 2 ವರ್ಷ ಇ. 2 ½ವರ್ಷ ಈ. 3 ವರ್ಷ

5. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಬೆಳಗ್ಗೆ ಮತ್ತು ಸಾಯಂಕಾಲವನ್ನು ಗುರುತಿಸಬಲ್ಲದು?
   ಅ. 2ವರ್ಷ ಆ. 2 ½ವರ್ಷ ಇ. 3 ವರ್ಷ ಈ. 3½ ವರ್ಷ

6. ಯಾವ ವಯಸ್ಸಿಗೆ ಮಗುವು ಗಾತ್ರ ಆಕಾರ ಮತ್ತು ಉದ್ದಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳಬಹುದು?
   ಅ. 3 ವರ್ಷ ಆ. 3 ½ವರ್ಷ ಇ. 4 ವರ್ಷ ಈ. 4½ ವರ್ಷ

X ಆಟಗಳು, ಪೌಷ್ಟಿಕತೆ ಮತ್ತು ಪೂರ್ವಭಾವಿ ಮಾರ್ಗದರ್ಶನದ ಬಗ್ಗೆ.

1. ಹುಟ್ಟಿದಾಗಿನಿಂದ 6 ತಿಂಗಳವರೆಗಿನ ಮಗುವಿಗೆ ಆಟವಾಡಲು ಕೊಡುವ ಆಟಿಕೆಗಳು ಯಾವುವೆಂದರೆ:
   ಅ. ಕೈಕಾಲು ಅಲುಗಾಡಿಸುವ, ಶಬ್ದಮಾಡುವ, ಮೆತ್ತಗಿನ ಹಾಗೂ ಭಿನ್ನಭಾವ ತೋರಿಸುವ ಆಟಿಕೆಗಳು.
   ಆ.ದೊಡ್ಡ ಮರದ ಆಟಿಕೆಗಳು
   ಇ.ತಳ್ಳುವ ಎಳೆಯುವ ಆಟಿಕೆಗಳು
   ಈ.ಮೂರು ಚಕ್ರದ ಸೈಕಲ್.

2. 6 ತಿಂಗಳಿನಿಂದ 1 ವರ್ಷದವರೆಗಿನ ಮಗುವಿಗೆ ಆಟವಾಡಲು ಕೊಡುವ ಆಟಿಕೆಗಳು ಯಾವುವೆಂದರೆ:
   ಅ. ಶಬ್ದಮಾಡುವ ಆಟಿಕೆಗಳು,
   ಆ. ಮೆತ್ತಗಿನ ಆಟಿಕೆಗಳು.
   ಆ. ದೊಡ್ಡ ಮರದ ಆಟಿಕೆಗಳು
   ಇ. ತಳ್ಳುವ ಎಳೆಯುವ ಆಟಿಕೆಗಳು
   ಈ. ಮೂರು ಚಕ್ರದ ಸೈಕಲ್.

3. 1 ವರ್ಷದಿಂದ 3 ವರ್ಷದವರೆಗಿನ ಮಗುವಿಗೆ ಆಟವಾಡಲು ಕೊಡುವ ಆಟಿಕೆಗಳು ಯಾವುವೆಂದರೆ:
   ಅ. ಅಡಿಗೆಮನೆ ಸಾಮಾನು, ದೂರ ಸಂಪರ್ಕ ಸಾಧನ, ಮೂರು ಚಕ್ರದ ಸೈಕಲ್, ಚೆಂಡು ಮತ್ತು ಬ್ಯಾಟ್,
   ಆ. ದೊಡ್ಡ ಮರದ ದಿಮ್ಮಿಗಳು
   ಇ. ತಳ್ಳುವ ಎಳೆಯುವ ಆಟಿಕೆಗಳು
   ಈ. ಮೆತ್ತಗಿನ ಆಟಿಕೆಗಳು.

4. 3 ವರ್ಷದಿಂದ 5 ವರ್ಷದವರೆಗಿನ ಮಗುವಿಗೆ ಆಟವಾಡಲು ಕೊಡುವ ಆಟಿಕೆಗಳು ಯಾವುವೆಂದರೆ:
   ಅ. ಬೊಂಬೆಗಳು ಮತ್ತು ಅವುಗಳಿಗೆ ಬಟ್ಟೆ, ಪೆನ್, ಕಾಗದ, ಕತ್ತರಿ, ಅಂಟು.
   ಆ. ಚೆಂಡು ಮತ್ತು ಬ್ಯಾಟ್.
   ಇ. ತಳ್ಳುವ ಮತ್ತು ಎಳೆಯುವ ಆಟಿಕೆಗಳು
   ಈ. ಅಡಿಗೆಮನೆ ಸಾಮಾನು ಮತ್ತು ದೂರ ಸಂಪರ್ಕ ಸಾಧನ,

5. ಈ ಸಮಯದವರೆಗೆ ಮಗುವಿಗೆ ತಾಯಿಯ ಎದೆ ಹಾಲನ್ನು ಮಾತ್ರ ಕೊಡಬೇಕು
   ಅ. 4 ತಿಂಗಳು ಆ. 6 ತಿಂಗಳು ಇ. 8 ತಿಂಗಳು ಈ. 10 ತಿಂಗಳು

6. ಈ ವಯಸ್ಸಿಗೆ ಮಗುವಿಗೆ ಅನ್ನವನ್ನು ಕೊಡಬಹುದು.
   ಅ. 6 ತಿಂಗಳು ಆ. 8 ತಿಂಗಳು ಇ. 10 ತಿಂಗಳು ಈ. 1 ವರ್ಷ

7. ಈ ವಯಸ್ಸಿಗೆ ಮಗುವಿಗೆ ಹಣ್ಣು ಮತ್ತು ತರಕಾರಿಗಳನ್ನು ಕೊಡಬಹುದು.
   ಅ. 6-8 ತಿಂಗಳು ಆ. 10 ತಿಂಗಳು ಇ.1 ವರ್ಷ ಈ 1½ ವರ್ಷ

8. 1 ವರ್ಷದಿಂದ 5 ವರ್ಷದ ಮಕ್ಕಳಿಗೆ ಕೊಡಬೇಕಾದ ಆಹಾರದ ರೀತಿ ಮತ್ತು ಸಂಖ್ಯೆ:

ಅ. 3 ಊಟ ಮತ್ತು 2 ಲಘು ಊಟ, ತರಕಾರಿ ಪೌಷ್ಟಿಕ ಆಹಾರದಿಂದ ಕೂಡಿರುವುದು.

ಆ. 3 ಊಟ ಮತ್ತು 1 ಲಘು ಊಟ, ಮಕ್ಕಳ ಆಯ್ಕೆಯಂತೆ

ಇ. 2 ಊಟ ಮತ್ತು ಹೆಚ್ಚು ಹಾಲು

ಈ. 3 ಊಟ ಮತ್ತು ಹೆಚ್ಚು ಹಾಲು

9. ಹುಟ್ಟಿದಂದಿನಿಂದ ಒಂದು ವರ್ಷದವರೆಗಿನ ಮಕ್ಕಳಿಗೆ ಸಾಮನ್ಯವಾಗಿ ಉಂಟಾಗುವ ಅಪಘಾತಗಳು.

ಅ. ಬೀಳುವುದು ಸುಟ್ಟ ಗಾಯಗಳು ಮತ್ತು ನೀರಿನಲ್ಲಿ ಮುಳುಗುವುದು.

ಆ. ವಿಷಸೇವನೆ ಉಸಿರುಕಟ್ಟಿಸುವುದು, ಶ್ವಾಸಸ್ತಂಭನವಾಗುವುದು.

ಇ. ಮೇಲಿನ ಎರಡೂ.

ಈ. ಯಾವೂದೂ ಅಲ್ಲ.

10. ಹುಟ್ಟಿದಂದಿನಿಂದ ಒಂದು ವರ್ಷದವರೆಗಿನ ಮಕ್ಕಳಿಗೆ ಸಾಮಾನ್ಯವಾಗಿ ಉಂಟಾಗುವ ಅಪಘಾತಗಳನ್ನು ತಡೆಗಟ್ಟುವ ಕ್ರಮಗಳು.

ಅ. ಮಗುವನ್ನು ಒಂಟಿಯಾಗಿ ರಕ್ಷಣೆಯಿಲ್ಲದೆ ಬಿಡಬಾರದು.

ಆ. ಔಷದಿ ಮತ್ತು ವಿದ್ಯುತ್ ಹೊರದಾರಿಗಳನ್ನು ಮಕ್ಕಳಿಗೆ ಎಟುಕದಂತೆ ಇರಿಸುವುದು.

ಇ. ಊಟ ಮತ್ತು ಸ್ನಾನದ ನೀರಿನ ಉಷ್ಣತೆಯನ್ನು ಉಪಯೋಗಿಸುವ ಮುಂಚೆ ಪರೀಕ್ಷಿಸುವುದು.

ಈ. ಮೇಲಿನ ಎಲ್ಲಾ ಕ್ರಮಗಳು

11. 1 ವರ್ಷದಿಂದ 3 ವಷದವರೆಗಿನ ಮಕ್ಕಳಲ್ಲಿ ಸಾಮಾನ್ಯ ಅಪಘಾತಗಳು.

ಅ. ಯಂತ್ರೋಪಕರಣಗಳು

ಆ. ಮೋಟಾರು ವಾಹನಗಳು, ನೀರಿನಲ್ಲಿ ಮುಳುಗುವಿಕೆ.

ಇ. ಮರ ಹತ್ತುವುದು, ಬೀಳುವುದು, ಸುಟ್ಟಗಾಯಗಳು, ವಿಷಸೇವನೆ.

ಈ. ಒಬ್ಬನೇ ನಡೆಯುವುದು.

12. 1 ವರ್ಷದಿಂದ 3 ವಷದವರೆಗಿನ ಮಕ್ಕಳಲ್ಲಿ ಸಾಮಾನ್ಯ ಅಪಘಾತಗಳು ತಡೆಗಟ್ಟಲು ತೆಗೆದುಕೊಳ್ಳಬಾಕಾದ ಕ್ರಮಗಳು.

ಅ. ಔಷದಿ ಮತ್ತು ವಿಷವಸ್ತುಗಳಿಗೆ ದೂರದಲ್ಲಿ ದೊಡ್ಡವರ ಮೇಲ್ವಿಚಾರಣೆಯಲ್ಲಿ ಆಟವಾಡುವುದು.

ಆ. ಮಗುವನ್ನು ಒಳಗಡೆ ಇಟ್ಟು ಬೀಗ ಹಾಕುವುದು.

ಇ. ಮಗುವನ್ನು ಒಂದೇ ಆಡಲು ಬಿಡುವುದು.

ಈ.ಮೆತ್ತಗಿನ ಆಟದ ಸಾಮಾನು ಕೊಡುವುದು.

13. 3 ವರ್ಷದಿಂದ 5 ವಷದವರೆಗಿನ ಮಕ್ಕಳಲ್ಲಿ ಸಾಮಾನ್ಯ ಅಪಘಾತಗಳು.

ಅ. ಮೋಟಾರು ವಾಹನಗಳು, ಪಾದಾಚಾರಿಗಳು ಸುಡುವುದು ಮತ್ತು ನೀರಿನಲ್ಲಿ ಮುಳುಗುವುದು.

ಆ. ಯಂತ್ರೋಪಕರಣಗಳು.

ಇ. ವಿಷಸೇವನೆ.

ಈ. ಔಷದಿಗಳು.

14. 3 ವರ್ಷದಿಂದ 5 ವಷದವರೆಗಿನ ಮಕ್ಕಳಲ್ಲಿ ಉಂಟಾಗುವ ಅಪಘಾತಗಳನ್ನು ತಡೆಗಟ್ಟುವ ಕ್ರಮಗಳು.

ಅ. ಮಗುವಿಗೆ ರಸ್ತೆಸುರಕ್ಷತೆ ಮತ್ತು ಅಗ್ನಿ ಸುರಕ್ಷತೆಯ ಬಗ್ಗೆ ಕಲಿಸುವುದು.

ಆ. ಮಗುವನ್ನು ಆಟವಾಡಲು ಬಿಡದೆ ಇರುವುದು.

ಇ. ಮಗುವನ್ನು ಒಳಗೆ ಇಟ್ಟುಕೊಳ್ಳುವುದು.

ಈ. ಮಕ್ಕಳಿಗೆ ಆಟಿಕೆಗಳನ್ನು ಕೊಡುವುದು.

ANNEXURE 6 :TOOL-2,

ATTITUDE OF MOTHER REGARDING GROWTH AND DEVELOPMENT

Dear participant, kindly put tick (√) mark under the option which you feel more appropriate for the following statements. SA-Strongly Agree, A- Agree,D- Disagree, SD-Strongly Disagree, U-Uncertain

Sl.No	Statements	SA	A	U	D	SD
1.	Parent-child relationship influences growth and development of child					
2.	Exercise stimulates muscular development					
3.	Climate and season has no effect on growth and development					
4.	Smoking and alcoholism has no effect on growth and development					
5.	Infections during pregnancy causes deformity in the child					
6.	Birth order of the child has no effect on growth and development					
7.	Attention of parents remains same on each child					
8.	Intelligence of the child influences the development					
9.	Illness contributes to growth impairment					
10.	Health status of the child directly influences the growth & development					
11.	Nutritionally sound diet is vital for optimal growth and development					
12.	Play enhances intimacy, self-esteem and mastery of skills					
13.	Play increases stress, fatigue, injury and dependency					
14.	Play increases efficiency of brain function					
15.	Accidents in children are preventable with safe practices					
16.	Strict discipline is the best way to raise children					
17.	Toilet training should be given to child as early as possible					
18.	Spanking teaches children right from wrong					
19.	Children need to be allowed freedom to explore their world in safety					
20.	Good children always obey their parents					
21.	Joint family leads to lack of attention to children					
22.	Working mother cannot spend more time with her children					
23.	Breast feeding influences mother and child bonding					
24.	Child rearing practices should be based on religious customs					
25.	Stimulation and encouragement by the mother is vital in attainment of developmental milestones					
26.	Mother is the first teacher and Family is the first school					
27.	Parental life style influences the child's growth and development					
28.	Grand mother is a very good support in rearing of children					
29.	Each child will have its own unique pattern of growth and development					
30.	Knowledge, attitude and practices of mother regarding growth and development influences her child's growth and development					

ವಿಭಾಗ–ಸಿ

ಐದು ವರ್ಷದೊಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಬಗ್ಗೆ ತಾಯಿಯರ ಮನೋವೃತ್ತಿ ಅಳತೆಯ ಸಂದರ್ಶನ ಸ್ವರೂಪದ ಪಟ್ಟಿ.

ಪ್ರೀತಿಯ ತಾಯಂದಿರೆ, ಈ ಕೆಳಗಿನ ವಾಕ್ಯಗಳಲ್ಲಿ ನಿಮ್ಮ ಅಭಿಪ್ರಾಯಕ್ಕೆ ಸರಿಹೊಂದುವ ವಾಕ್ಯಕ್ಕೆ ಕೊಟ್ಟಿರುವ ಜಾಗದಲ್ಲಿ (√) ಚಿಹ್ನೆಯನ್ನು ಬರೆಯಿರಿ.

ಸಂಖ್ಯೆ	ವಾಕ್ಯಗಳು	SA	SA	U	D	SD
1	ತಾಯಿ ಮತ್ತು ಮಗುವಿನ ಸಂಬಂಧವು, ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ					
2	ವ್ಯಾಯಾಮ ಮಾಂಸಖಂಡಗಳ ಬೆಳವಣಿಗೆಯನ್ನು ಉತ್ತೇಜಿಸುತ್ತದೆ					
3	ಹವಾಗುಣ ಮತ್ತು ಋತುಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಯಾವ ರೀತಿಯ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ.					
4	ಧೂಮಪಾನ ಮತ್ತು ಮದ್ಯಪಾನ ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಯಾವ ರೀತಿ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ					
5	ಗರ್ಭಿಣಿಯಾಗಿರುವಾಗ ಸೋಂಕು ಬಂದರೆ ಮಗುವಿಗೆ ಅಂಗವಿಕಲತೆ ಉಂಟುಮಾಡುತ್ತದೆ.					
6	ಮಗುವಿನ ಹುಟ್ಟುಕ್ರಮ, ಅದರ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ					
7	ಮಕ್ಕಳ ಮೇಲೆ ತಾಯಿಯ ಆಸಕ್ತಿ ಮಗುವಿನಿಂದ ಮಗುವಿಗೆ ಒಂದೇ ರೀತಿಯಾಗಿರುತ್ತದೆ					
8	ಮಗುವಿನ ಬುದ್ಧಿವಂತಿಕೆ ಅದರ ವಿಕಾಸದ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ.					
9	ಅನಾರೋಗ್ಯವು ಬೆಳವಣಿಗೆ ಕುಂಟಿತಗೊಳ್ಳಲು ಸಹಾಯಮಾಡುತ್ತದೆ					
10	ಮಗುವಿನ ಆರೋಗ್ಯ ಸ್ಥಿತಿಯು ಅದರ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ನೇರ ಪ್ರಭಾವ ಬೀರುತ್ತದೆ					
11	ಅತ್ಯುತ್ತಮವಾದ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸಕ್ಕೆ ಪೌಷ್ಟಿಕ ಆಹಾರ ಅತಿ ಮುಖ್ಯ.					
12	ಆಟಗಳು ಆತ್ಮೀಯತೆ, ಸ್ವಪ್ರತಿಷ್ಠೆ ಮತ್ತು ಪ್ರವೀಣತೆಗಳನ್ನು ಹೆಚ್ಚಿಸುತ್ತವೆ					
13	ಆಟಗಳು ಒತ್ತಡ, ಆಯಾಸ, ಗಾಯಗಳು ಮತ್ತು ಪರಾವಲಂಬಿತನವನ್ನು ಹೆಚ್ಚಿಸುತ್ತವೆ.					
14	ಆಟಗಳು ಕಾರ್ಯಸಮರ್ಥತೆ ಮತ್ತು ಮೆದುಳಿನ ಕೆಲಸವನ್ನು ಹೆಚ್ಚಿಸುತ್ತವೆ.					
15	ಮಕ್ಕಳಲ್ಲಿನ ಅಪಘಾತಗಳನ್ನು ಸುರಕ್ಷಾಕ್ರಮಗಳನ್ನು ಪಾಲಿಸುವುದರಿಂದ ತಡೆಗಟ್ಟಬಹುದು.					
16	ಮಕ್ಕಳನ್ನು ಸರಿಯಾದ ರೀತಿಯಲ್ಲಿ ಬೆಳೆಸುವ ದಾರಿ ಎಂದರೆ ಕಟ್ಟುನಿಟ್ಟಾದಶಿಸ್ತು					
17	ಮಲಮೂತ್ರ ವಿಸರ್ಜನೆಯ ತರಬೇತಿಯನ್ನು ಸಾಧ್ಯವಾದಷ್ಟು ಶೀಘ್ರವಾಗಿ ಪ್ರಾರಂಭಿಸಬೇಕು					
18	ಕೈಯಿಂದ ಹೊಡೆಯುವುದರಿಂದ ಮಕ್ಕಳಿಗೆ ಸರಿ ತಪ್ಪು ಕಲಿಸಬಹುದು.					
19	ಮಕ್ಕಳು ಪ್ರಪಂಚವನ್ನು ಪರಿಶೀಲಿಸಲು ಪೋಷಕರ ರಕ್ಷಣಾಪರಿದಿಯಲ್ಲೇ ಸ್ವೇಚ್ಛೆಯಾಗಿ ಬಿಡುವುದು ಅವಶ್ಯಕ					
20	ಒಳ್ಳೆಯ ಮಕ್ಕಳು ಯಾವಾಗಲು ತಾಯಿತಂದೆಯರಿಗೆ ವಿಧೇಯರಾಗಿರುತ್ತಾರೆ.					
21	ಎದೆಹಾಲು ಉಣಿಸುವುದು ಮಕ್ಕಳ ಶೀಘ್ರ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸವನ್ನು ಹೆಚ್ಚಿಸುತ್ತದೆ.					
22	ತಾಯಿ ಮಗುವಿನ ಜೊತೆ ಸಮಯಕಳೆಯುದರಿಂದ ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಯಾವ ರೀತಿಯ ಪರಿಣಾಮವು ಬೀರುವದಿಲ್ಲ.					
23	ತಾಯಿಯ ಆರೋಗ್ಯವು ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಯಾವ ಪ್ರಭಾವವು ಬೀರುವುದಿಲ್ಲ.					
24	ತಾಯಿಯಿಂದ ಸಿಗುವ ಪ್ರೋತ್ಸಾಹ ಹುರಿದುಂಬಿಸುವಿಕೆ, ಮಗುವು ಬೆಳವಣಿಗೆಯ ಮೈಲಿಗಲ್ಲುಗಳನ್ನು ಸಾಧಿಸಲು ಸಹಾಯ ಮಾಡುತ್ತದೆ					
25	ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಬಗ್ಗೆ ತಾಯಿಗಿರುವ ಅರಿವು ಆ ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸದ ಮೇಲೆ ಯಾವ ರೀತಿಯ ಪ್ರಭಾವವು ಬೀರುವದಿಲ್ಲ.					
26	ಒಟ್ಟು ಕುಟುಂಬವು ಮಗುವಿನ ಮೇಲೆ ಗಮನವನ್ನು ಕಡಿಮೆ ಮಾಡುತ್ತದೆ.					
27	ತಾಯಿಯ ಉದ್ಯೋಗವು ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವಿಕಾಸವನ್ನು ಕುಂಠಿತಗೆಳಿಸುತ್ತದೆ.					
28	ಮಕ್ಕಳಿಗೆ ಯಾವಾಗಲೂ ಪೊಷಕರಿಗೆ ವಿಧೇಯನಾಗಿರಬೇಕು ಎಂದು ಹೇಳಿಕೊಡಬೇಕು					
29	ಯಾವ ಮಕ್ಕಳಿಗೆ ಹೊಗಳಿಕೆ ಸಿಗುತ್ತದೆಯೋ ಅವರ ಬಗ್ಗೆ ದೊಡ್ಡದಾಗಿ ಭಾವಿಸುತ್ತಾರೆ.					
30	ಮಕ್ಕಳು ಪೋಷಕರನ್ನು ಗೌರವಿಸಬೇಕಾದರೆ ಸ್ವಲ್ಪ ಮಟ್ಟಿಗೆ ಭಯ ಅವಶ್ಯ.					

ANNEXURE 7

TOOL 3

OBSERVATION CHECKLIST TO ASSESS THE PRACTICE OF MOTHER

I	MOTHER's INTERACTION WITH THE CHILD	YES	NO
1	Keeps talking to child at least twice during visit		
2	Responds to child's sounds with a verbal response		
3	Tells child the name of some object or name of person or object in a teaching style		
4	Speech to the child is clear, and audible		
5	Allows child occasionally to engage in messy type of play		
6	Always praises child's qualities or behavior twice during visit		
7	Conveys positive feeling, while speaking to child		
8	Cuddles or kisses child at least once during visit		
9	Shows to child when outsiders praises the child		
II	**PUNISHMENT AND DISCIPLINE**		
10	Does not shout at child during visit, unnecessarily		
11	Does not express annoyance or hostility toward child		
12	Neither slaps nor spanks or scolds child during visit		
13	Uses smooth and loving words while saying right and wrong		
14	Does not interfere with child's actions or restrict child's movements more often		
III	**PHYSICAL ENVIRONMENT**		
15	Child was not left alone while mother was away		
16	Child was taken to nearby shop at least once		
17	Child goes out of house atleast four times a week		
18	Child is taken regularly to doctor's clinic		
19	Child toys and things were kept separately		
20	Safe and hazard free play environment was provided for the child		
IV	**PLAY ARTICLES provided for the child**		
21	Building blocks		
22	Push or pull toy.		
23	Walker, kiddie car, scooter or tricycle		
24	Mother keep changing play articles as peer the interest of the child		
25	Age appropriate play articles		
26	Eye-hand coordination toys		
27	Story books and music toys		
V	**MOTHER'S INVOLVEMENT IN CHILD CARE**		
28	She tries to keep child in her vicinity while playing		
29	She keep talking to child while engaged in her work		
30	She praises and encourages any of the developmental activity of the child		
31	She plan periods of child care		
32	She provides toys to stimulate and encourage child's skills		
VI	**PROVISION OF AGE APPRPRIATE TOYS FOR STIMULATION**		

33	Toys to learn colors, sizes, shapes		
34	Toy or game facilitating learning letters		
35	Three or more puzzles		
36	Two toys necessitating some finger and whole hand movements		
37	Real or toy musical instruments		
38	Toy or game permitting free expression		
39	Toys or game necessitating refined movements		
40	Toys to learn animals		
41	Toy or game facilitating learning numbers		
VII	**STIMULATION FOR SOCIALIZATION**		
42	Turns on TV for special program for children		
43	Reads story books for the child		
44	Encourages child to narrate experiences		
45	Cuddles the child 10-15 minutes per day		
46	Sings to child, or sings in presence of child		
47	Child toys and treasures are kept in special place		
48	Child's art work is displayed some place in house		
49	Introduces the child to newcomer		
50	Observed conversation with child at least twice during visit		
51	Answers verbally /non verbally to the child's questions		
52	She usually responds verbally to child's talking		
53	Provides alternate toy if the child shows disinterest in one toy		
54	She spontaneously praises child's qualities or behavior in front of others		
55	While speaking to child, her voice conveys love and affection		
56	Mother caresses, kisses or cuddles child at least once during visit		
VIII	**STIMULATION OF COGNITIVE DEVELOPMENT**		
	Child is encouraged to learn the following		
57	colors		
58	shapes		
59	Patterned speech		
60	The alphabet		
61	To tell time		
62	Spatial relationships		
63	Numbers		
64	To read a few words		
65	Tries to pick up and put away toys without help		
66	Child is taught rules of social behavior that involve recognition of rights of others		
67	Mother teaches child some simple manners		
68	Some delay of food gratification is demanded of the child		

ANNEXURE 8: TOOL-4

SELF-RATING SCALE OF MOTHERS' OPINION REGARDING SELF-INSTRUCTIONAL -MODULE ON GROWTH AND DEVELOPMENT OF UNDERFIVE CHILDREN

Instructions: Dear participants, kindly give your opinion regarding the Self-Instructional Module, which you have used all these days. Read the statements and put tick mark under the opinion which you feel appropriate.

Sl. No	Statement	Agree	Un certain	Dis agree
1.	Self-Instructional module included all the necessary information related to growth and development of underfive children			
2.	I became aware of the various diverse information on growth and development of underfive children			
3.	The information is useful to monitor my child's growth and development in a healthier way			
4.	The information was clear and understandable as it was assisted with pictures			
5.	The language used is simple			
6.	Information can be correlated with the day-to-day life experiences			
7.	I was satisfied with the information provided			
8.	It is very much necessary for the mothers to know about growth and development of children			
9.	Self-study exercise is very easy to follow and complete			
10.	Overall this study exercise is very good			

ಐದು ವರ್ಷದೊಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಕುರಿತು ಸ್ವಯಂ ಕಲಿಕಾ ಮಾದರಿಯ ಬಗ್ಗೆ ತಾಯಂದಿರ ಅಭಿಪ್ರಾಯ.

ಪ್ರೀತಿಯ ತಾಯಿಯರೇ ದಯವಿಟ್ಟು ಈ ಕೆಳಗಿನ ವಾಕ್ಯಗಳನ್ನು ಓದಿ ನಿಮಗೆ ಯಾವ ಅಭಿಪ್ರಾಯ ಸರಿ ಅನಿಸುತ್ತದೆಯೋ ಅದರ ಕೆಳಗೆ (√) ಗುರುತು ಹಾಕಿ.

ಕ್ರ ಸಂ.	ವಾಕ್ಯಗಳು	ಒಪ್ಪಿಕೊಳ್ಳುತ್ತೇನೆ	ಹೇಳಲಾಗದು	ಒಪ್ಪಿಕೊಳ್ಳುವುದಿಲ್ಲ
1	ಈ ಕಲಿಕಾ ಮಾದರಿಯು ಐದು ವರ್ಷದೊಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಕುರಿತು ಬೇಕಾದ ಎಲ್ಲಾ ಸಮಾಚಾರವನ್ನು ಒಳಗೊಂಡಿದೆ			
2	ಐದು ವರ್ಷದೊಳಗಿನ ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಕುರಿತು ನಾನಾ ರೀತಿಯ ವಿವಿಧ ವಿಷಯಗಳನ್ನು ನಾನು ತಿಳಿದುಕೊಂಡೆ			
3	ಈ ಸಮಾಚಾರವು ನನ್ನ ಮಗುವಿನ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯನ್ನು ಆರೋಗ್ಯಕರ ರೀತಿಯಲ್ಲಿ ಗಮನಿಸುವುದಕ್ಕೆ ಸಹಾಯವಾಗಿದೆ.			
4	ಇದರಲ್ಲಿ ವಿಷಯಗಳು ಚಿತ್ರಗಳ ಜೊತೆ ಕೊಟ್ಟಿರುವುದರಿಂದ ವಿಷಯವು ಸ್ಪಷ್ಟವಾಗಿದೆ ಮತ್ತು ಅರ್ಥವಾಗುತ್ತದೆ.			
5	ಬಳಸಿರುವ ಭಾಷೆಯು ಸರಳವಾಗಿದೆ			
6	ವಿಷಯಗಳನ್ನು ದಿನನಿತ್ಯದ ಜೀವನದ ಅನುಭವಗಳಿಗೆ ಹೊಂದಿಸಬಹುದು			
7	ಕೊಟ್ಟಿರುವ ಸಮಾಚಾರದಿಂದ ನನಗೆ ತೃಪ್ತಿಯಾಗಿದೆ			
8	ತಾಯಂದಿರು ಮಕ್ಕಳ ಬೆಳವಣಿಗೆ ಮತ್ತು ವೃದ್ಧಿಯ ಬಗ್ಗೆ ತಿಳಿಯುವುದು ಬಹಳ ಮುಖ್ಯ			
9	ಇದರಲ್ಲಿರುವ ಸ್ವಯಂ ಕಲಿಕಾ ಚಟುವಟಿಕೆಗಳನ್ನು ಅನುಸರಿಸಿ ಪೂರ್ತಿ ಮಾಡುವುದು ಬಹಳ ಸುಲಭ			
10	ಪೂರ್ತಿಯಾಗಿ ಈ ಕಲಿಕಾ ವ್ಯಾಯಾಮವು ಬಹಳ ಚೆನ್ನಾಗಿದೆ			

ANNEXURE 9

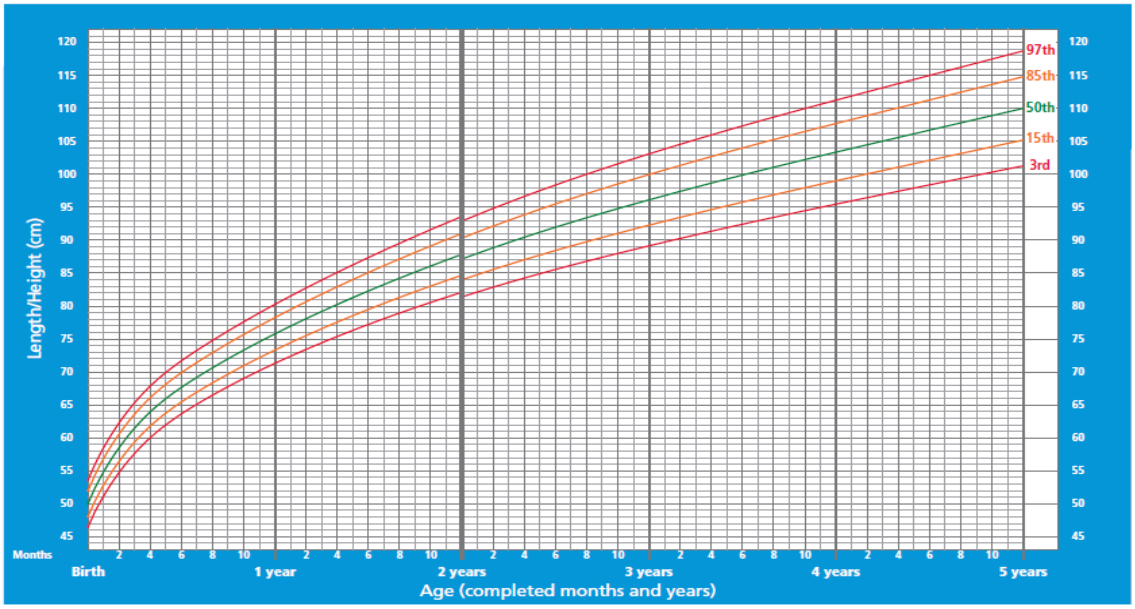
TOOL-5

WHO GROWTH CHARTS

Length/height-for-age BOYS

Birth to 5 years (percentiles)

World Health Organization

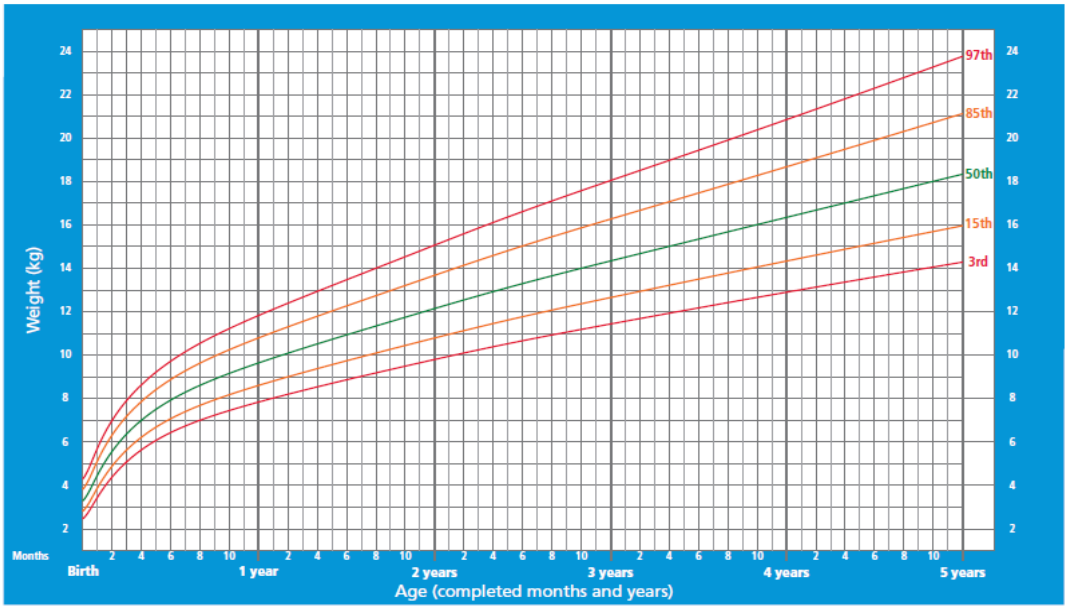


WHO Child Growth Standards

Weight-for-age BOYS

Birth to 5 years (percentiles)

World Health Organization

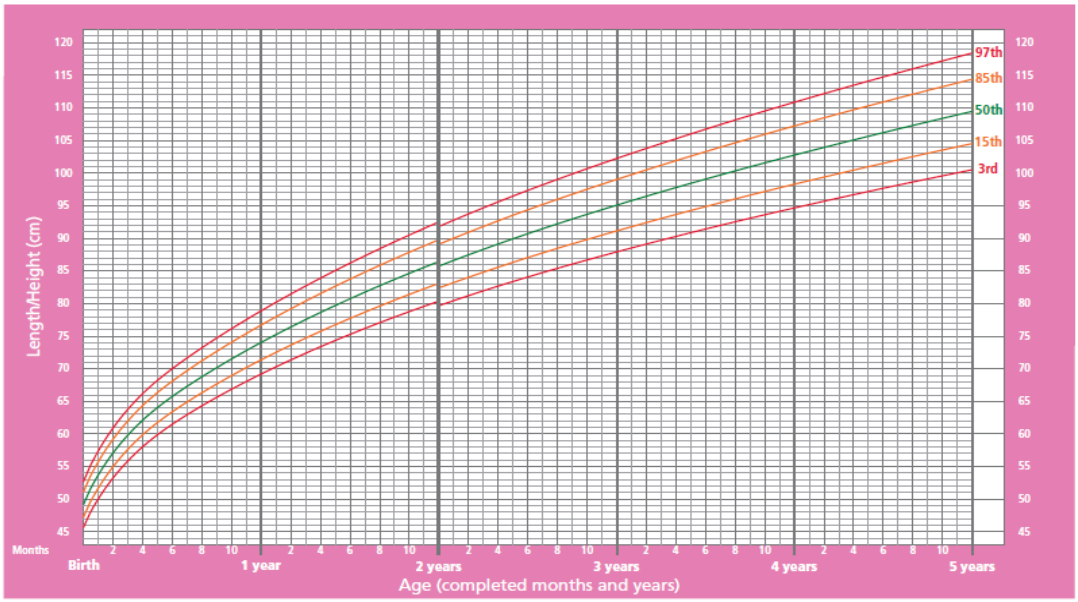


WHO Child Growth Standards

Length/height-for-age GIRLS

Birth to 5 years (percentiles)

World Health Organization

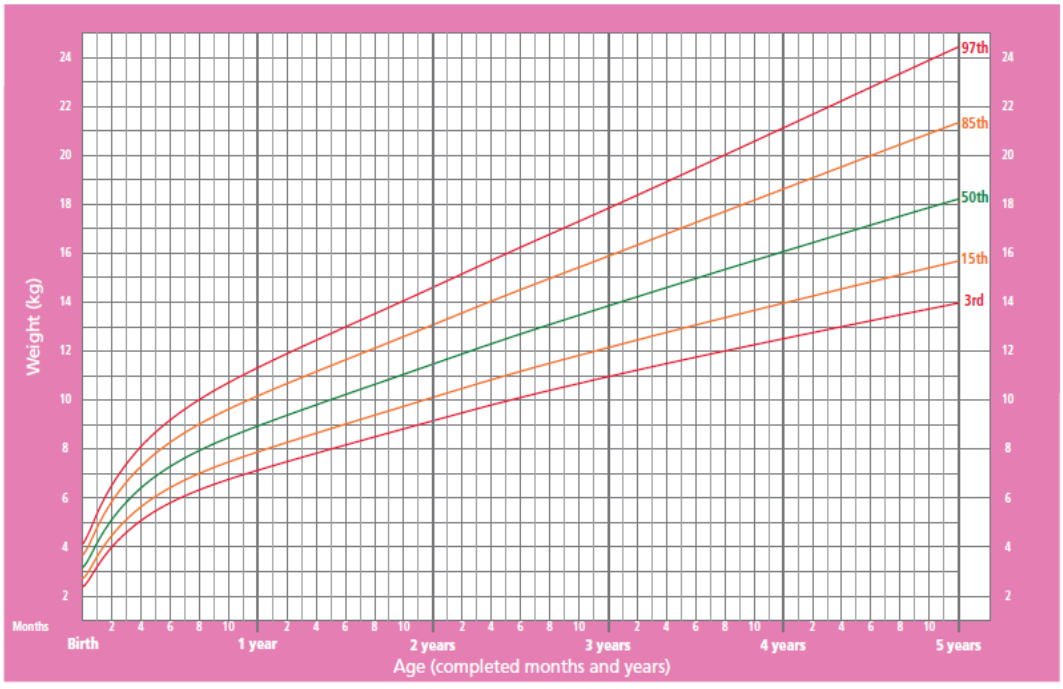


WHO Child Growth Standards

Weight-for-age GIRLS

Birth to 5 years (percentiles)

World Health Organization



WHO Child Growth Standards

ANNEXURE 10

TOOL-6

Denver Developmental Screening Test II: Critical Milestones 2 months to 5 years

Terms	Definitions
2 months (personal/social)	Smiles responsively; looks at faces
2 months (fine motor)	Follows to midline
2 months (language/cognitive)	Vocalizes making cooing or short vowel sounds; responds to a bell
2 months (gross motor)	Lifts head; equal movements
4 months (personal/social)	Smiles responsively; smiles spontaneously; stares at own hand
4 months (fine motor)	Grasps a rattle; follows past midline; brings hands to middle of body
4 months (language/cognitive)	Laughs and squeals out loud; vocalizes; makes "ooh" sounds
4 months (gross motor)	Lifts head and chest 45 and 90 degrees when prone; head steady when sitting
6 months (personal/social)	Reaches for toy out of reach; looks at hand; smiles spontaneously
6 months (fine motor)	Looks at raisin placed on contrasting surface; reaches out; follows completely side to side
6 months (language/cognitive)	Turns to rattle sound made out of vision on each side; squeals; laughs
6 months (gross motor)	Rolls over both directions; no head lag; lifts head and chest completely
9 months (personal/social)	Feeds self finger foods; tries to get toys; looks at hands
9 months (fine motor)	Transfers; rakes a raisin or Cheerio; picks up and holds a small object in each hand
9 months (language/cognitive)	Imitates sounds; says single syllables; begins to put syllables together
9 months (gross motor)	No head lag; sits without support; stands holding onto furniture

12 months (personal/social)	Plays pat-a-cake; feeds self; works to get a toy
12 months (fine motor)	Developed pincer grasp; bangs objects together; picks up two cubes
12 months (language/cognitive)	Jabbers; combines syllables; mama/dada is nonspecific
12 months (gross motor)	Stands briefly without support; gets to sitting position; pulls to stand
15 - 18 months (personal/social)	Begins to imitate; helps in the house; feeds self with increasing skill (still rotates the spoon, if used) and holds a cup
15 - 18 months (fine motor)	Builds a tower with increasing number of blocks; scribbles; able to put a block in a cup
15 - 18 months (language/cognitive)	Says 3 to 10 single words; can point to several body parts
15 - 18 months (gross motor)	Walks well forward and backward; stoops and recovers
3 years (personal/social)	Brushes teeth with help, puts on clothing, feeds a doll
3 years (fine motor)	Builds a tower of at least four to six cubes
3 years (language/cognitive)	Points to and names four familiar pictures (cat, horse, bird, dog, man); speech understandable 50% of the time
3 years (gross motor)	Throws a ball overhand; jumps; kicks a ball forward
4 - 5 years (personal/social)	Puts on a T-shirt; washes and dries hands; names a friend
4 - 5 years (fine motor)	Imitates a vertical line; wiggles thumbs; builds a tower of eight cubes
4 - 5 years (language/cognitive)	Knows two adjectives (e.g., tired, hungry, cold); identifies one color; knows the use of two objects (e.g., cup, chair, pencil)
4 - 5 years (gross motor)	Balances on each foot for 1 second; jumps forward; throws a ball overhand

ANNEXURE 11

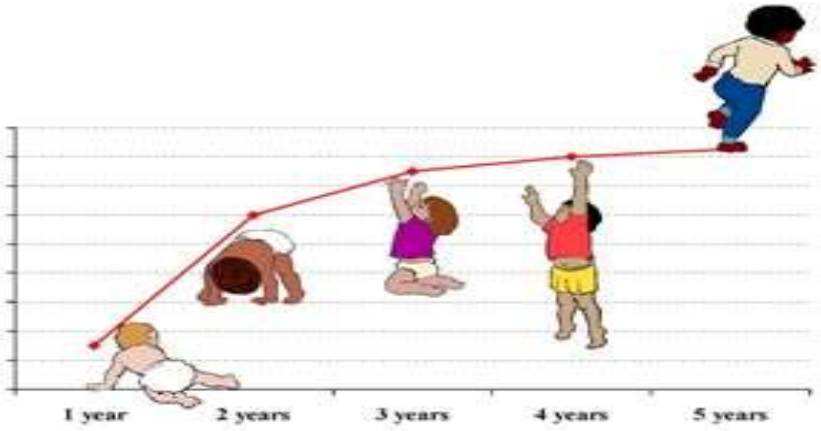
LIST OF EXPERTS FOR CONTENT VALIDITY

1. Dr. B.S.Shakunthala
   Principal,
   AECS Maruthi College of Nursing,
   Bangalore.
2. Dr. G. Kasthuri
   Principal
   Oxford College of Nursing,
   Bangalore.
3. Dr.Jyothi
   Principal,
   Siddaganga Institute of Nursing,
   Tumkur
4. Dr.G.VIjayalakshmi
   Principal,
   Sri DevarajUrs College of Nursing,
   Kolar
5. Dr. Baby Nayak
   Professor,
   Manipal College of Nursing,
   Manipal
6. Dr. Susheela
   HOD, Pediatric Department
   R L Jalappa Hospital and Research Center
7. Dr. Sudha Reddy
   Assoc.Professor
   Sri DevarajUrs Medical College
   Kolar
8. Dr. Krishnappa J.
   Professor,
   Sri DevarajUrs Medical College
   Kolar
9. Dr. Beeregowda,
   Professor,
   Sri DevarajUrs Medical College
   Kolar
10. Mr.Ravi Shankar,
    Bio-statistician,
    Sri DevarajUrs Medical College
    Kolar

ANNEXURE 12

SELF INSTRUCTIONAL MODULE ON GROWTH AND DEVELOPMENT OF UNDERFIVE CHILDREN

The ABC's Of Child Development



Prepared by:
Mrs. Radha. M.S
Ph.D.Scholar

Research Supervisor:
Prof.Dr.B.A.PATALIAH

VINAYAKA MISSIONS UNIVERSITY, SALEM

INDEX

INTRODUCTION

Welcome to the study material designed to provide the information which mothers need to understand their unique child/children and to enable them to help each child grow and develop into the successful human being they were meant to be.

Becoming a good mother means much more than knowing a lot about babies. If you have ever observed the progress of a major building project, you have seen that scaffolding is put up first and is used to provide support while the structure is being built. As the project reaches each stage of completion, the scaffolding is gradually removed as the building can support itself. The mother's role in child development is to provide the scaffolding for their child and gradually remove it as the child attains skills and abilities while they move from one developmental stage to another.

General Objective:

After studying the Self-Instructional Module, the mothers of underfives will gain in depth knowledge regarding various aspects of growth and development of underfive children, in turn modifies their attitude and child rearing practices.

Specific Objectives:

After studying the module, the mothers will be able to

1. List what pattern of behavior to expect of children at the given age
2. Set up guidelines for assessing the growth and development of underfive children
3. Guide the child's learning capabilities at appropriate times
4. Identify any deviations from normal pattern
5. Prepare children ahead of time for the changes that will take place in their bodies, their interests or their behavior

Guide lines for using Self- Instructional Module

- ❖ Self-Instructional Module is one of the educational materials that help in individualized learning.
- ❖ This Module consists of five units. All the contents should be read and studied in a systematic way from the beginning till the end to understand.
- ❖ Each unit will have self assessment exercise consisting of multiple choice questions. Mark the correct answers with a tick (√) mark in the given space.
- ❖ If any difficulty is experienced in understanding the terms, please clarify with the investigator

This module will help you to understand about

- Meaning of growth and development
- Factors influencing growth and development
- Various domains and pattern of growth and development
- Importance of nutrition and play in child's growth and development
- Child safety measures

This in turn helps you to adopt positive child rearing practices

UNIT-I: MEANING AND FACTORS INFLUENCING GROWTH AND DEVELOPMENT

LEARNING OBJECTIVES:

After studying this unit mothers will be able to:

1. Give the meaning for growth and development
2. List the factors influencing growth and development

➢ Meaning:

- **Growth:** Growth means increase in size, and maturation of various organs of the body. It can be measured in inches or centimeters and in pounds or kilograms. It is a quantitative change
- **Development:** Development is a progressive increase in skill and capacity to function. It causes qualitative change in the child's functioning.

Development is the result of "transactions" between the child and his/her environment. Each transaction results in new learning which results in the development of skills and traits. The right frequency, quality and intensity of interactions between children and their environment will result in each child reaching his or her full potential.

➢ Factors Influencing growth and development

Mainly there are four factors which influence the growth and development of children. They are

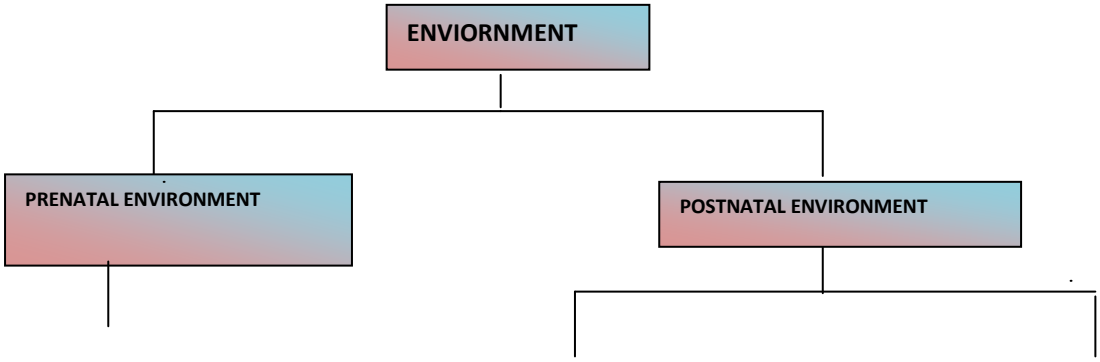
1. Heredity
2. Environment
3. Nutrition
4. Health

I. Heredity:

Heredity decides size and shape of the body; therefore, family members bear resemblance. The characteristics are transmitted through genes that are responsible for family illness. Eq: Diabetes Mellitus

II. Environment

Environment has a major role in the growth and development of children



Infections ExternalInternalDrugs Cultural influences Intelligence

Exposure to radiation Socio-economicstatusHormones

Climate and seasonEmotions

Exercise

Ordinal position in the family

i) Prenatal Environment:

1. **Infections**- Mother suffering from infections like rubella in 1st trimester of pregnancy, toxoplasmosis, syphilis, herpes infection in 2nd and 3rd trimesters causes deformity in the child
2. **Drugs**- drugs like narcotics, tranquilizers, anti-cancerous drugs, habits like smoking and alcoholism causes prematurity or deformity in the child
3. **Exposure to radiation**- also leads to deformities in the child

ii) Postnatal Environment:

a) External

1. **Cultural Influences**- affects the child rearing practices
2. **Socio-economic status of the family**- low social standards and low economy leads to morbidity and mortality among children. eq. Lack of money to buy essential nutrients requirements which leads to ill health and malnutrition
3. **Climate and season**- influences the activity levels of children, which influence the growth rate. Eq. Spring and early summer weight gain is less, Late summer and autumn, weight gain is more.
4. **Exercise-** Increased blood circulation promotes physiological activity, stimulates muscular development. Fresh air and moderate sunshine will favor healthy growth.
5. **Ordinal position in the family**-Children learns from older siblings, which may be lacking in the first child. Attention from parents also varies from first child to the second child.

b) Internal

1. **Intelligence**- influences motor development, psycho-social development and language development.
2. **Hormonal influences**-rate of secretion of hormones influences growth and development
3. **Emotions**- Parent-child attachment, love and security influence the growth and development. The disturbed children neither sleep, nor eat well as one who is happy.

III. Nutrition

Quality and quantity of food consumed by the children have effect on their body building and resistance against infections

IV. Health

Health directly influences the growth and development of the child. Illness may reduce the weight and cause hindrance in the child's progress. Illness may also contribute to growth impairment.

SELF-STUDY EXERCISE

Choose the correct answer

1. Growth means

(a) Increase in size and maturation of various organs of the body

(b) Increase in size (c) maturation of various organs of the body

(d) None

2. Development means

e. Progressive increase in skill and capacity to function

(b) Increase in skill

(c) Increased capacity to function (d) Maturation

3. What all factors influence the growth and development of children?

e. Heredity and environment (b) Health and Nutrition

(c)Both a and b (d) None of the above

UNIT-II VARIOUS DOMAINS AND PATTERN OF GROWTH AND DEVELOPMENT OF UNDERFIVE CHILDREN

LEARNING OBJECTIVES:

After studying this unit mothers will be able to:

1. List the various domains of growth and development of underfive children
2. Identify pattern of growth and development of their underfive child
3. Detect any deviation from normal pattern

The growth and development of underfive children can be grouped under the following domains. They are

1. Physical growth
2. Motor Development- Gross motor and Fine motor
3. Language / Communication development
4. Social development
5. Sexual development
6. Spiritual Development
7. Cognitive Development
8. Moral development

1) Physical Growth

Progressive increase in the size of the body or parts of the body is called Physical growth.

Major milestones are as follows

AGE	MILESTONE
3-4 months	Drooling of saliva
5-6 months	Doubles the birth weight
6-8 months	Two lower central incisors erupt
7-8 months	Upper central incisors erupt
7-9 months	Lower lateral incisors erupt
9-11 months	Upper lateral incisors erupt
12 months	6-8 temporary teeth erupt Triples the birth weight Doubles the birth height
1½ year	Anterior fontanel closes Has sphincter control
2years	Has 16 temporary teeth
2½ year	Has day time bladder and bowel control Has full set of 20 temporary teeth
4years	Remains dry at night
5 years	Anticipates immediate toilet needs

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Anterior fontanel closes by---------- age
2. Child develops Sphincter control by ----------age
3. Child will have approximately 16 temporary teeth by ----------age
4. Child remains dry during day time by ---------age
5. Child will have 20 temporary teeth by ---------age

2) Motor Development

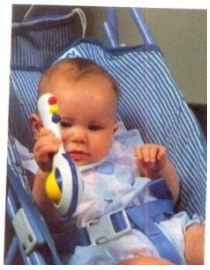
Motor development means the development of control over bodily movements through the coordinated activity of the nerve centers, the nerves and muscles.

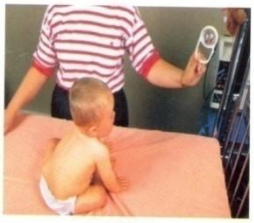
i) Gross motor development includes movements which involve the large areas of the body used in walking, running, jumping, swimming and so on.

ii) Fine motor development includes movements which involve the smaller muscle groups used in grasping, throwing and catching balls, writing and using tools. The milestones are as follows.

i) Gross Motor Development

AGE	MILESTONE
3-6 months	Can roll over
6-9 months	Can hold head steady when sitting Can sit with support Can creep and crawl Can stand with support
9-12 months	Can sit without support Can walk holding on to furniture
1year to 2years	Can walk without help can walk up and down stairs alone with both feet on each step
2 years to 3 years	Can walk up and down stairs alone with one feet on each step Can pedal a tri-cycle
3- 4 years	Can climb playground equipments
4-5 years	Can imitate a dance step





Self-Study Exercise

Fill in the blanks with appropriate answers

a. Child can hold head steady when sitting by ---------- age

b. Child can roll over by --------age

c. Child can sit with support by --------age

d. Child can sit without support by --------age

e. Child can crawl and creep by --------age

f. Child can stand with support by --------age

g. Child can walk holding on to furniture by --------age

h. Child can walk without help by --------age

i. Child can walk up and down stairs alone with both feet on each step by --------age

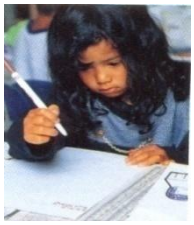
j. Child can walk up and down stairs alone with both feet on each step by --------age

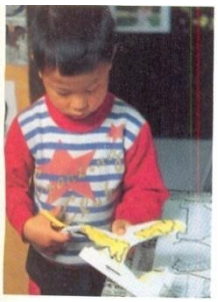
k. Child can pedal a tri-cycle by --------age

l. Child can climb playground equipments by --------age

m. Child can imitate a dance step by --------age

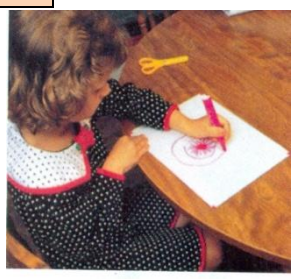
ii) Fine Motor Development





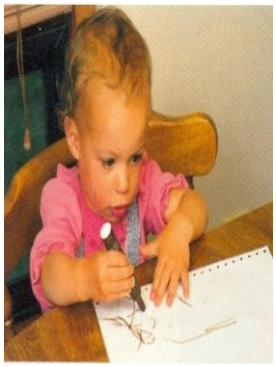
AGE	MILESTONE
3-6 months	Can carry an object or hand to the mouth
6-9 months	Can grasp object with both hands Can play with toes Can play with a rattle Can transfer object from one hand to the other
9-12 months	Can eat with thumb and finger Can drink from a cup with help
1 year to 2 years	Can scribble spontaneously Can remove simple garments
2-3 years	Can use spoon for feeding Can put beads on string
3-4 years	Can brush teeth with help

	Can copy a circle Can tie shoe laces
4-5 years	Can cut picture with scissors Can copy a diamond, triangle or letter Can use pencil very well



Self-Study Exercise

Fill in the blanks with appropriate answers



1. Child carry an object or hand to the mouth by --------age
2. Child can grasp object with both hands by --------age
3. Child can play with toes by --------age
4. Child can play with a rattle by --------age
5. Child can transfer object from one hand to the other by --------age
6. Child can eat with thumb and finger by --------age
7. Child can drink from a cup with help by --------age
8. Child can scribble spontaneously by --------age
9. Child can remove simple garments by --------age
10. Child is able to use spoon for feeding by --------age
11. Child is able to put beads on string by --------age
12. Child can copy a circle by --------age
13. Child can brush its teeth with help by --------age
14. Child can cut picture with scissors by --------age
15. Child can tie its shoelaces by --------age
16. Child can copy a diamond, triangle or letter by --------age
17. Child can use pencil very well by --------age

3)Language / communication development

Language encompasses every means of communication in which thoughts and feelings are symbolized so as to convey meaning to others. It includes writing, speaking, sign language, facial expression, gesture, pantomime and art.

Communication means an interchange of thoughts and feelings

Major Developmental Milestones are as follows

AGE	MILESTONE
3-6 months	Can make coo and chuckle sounds
9-12 months	Can respond to his name Can vocalize monosyllables-ma, da Can understand simple directions- come, go Can shake head to communicate “no”
1-2 years	Can vocalize chained syllables-baba, dada,kaka Can imitate speech sounds Can respond to simple verbal commands Can point to body parts
2- 3 years	Can imitate animal sounds Can refer to self by his first name Can use complete sentence
3-4 years	Can recognize colours
4-5 years	Can describe pictures

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Child can make coo and chuckle sounds by ----------age
2. Child can respond to his name by ----------age
3. Child can vocalize monosyllables- ma, da by ----------age
4. Child vocalizes chained syllables-baba, dada, and kaka by ---age
5. Child imitates speech sounds by ----------age
6. Child responds to simple verbal commands by ----------age
7. Child understands simple directions- come, go by ----------age
8. Child imitates animal sounds by ----------age
9. Child shakes head to communicate “no” by ----------age
10. Child points to body parts by ----------age
11. Child refers to self by his first name by ----------age
12. Child uses complete sentence by ----------age
13. Child recognizes colors by ----------age
14. Child describes pictures by ----------age

4) Social Development

Social development is the process of acquisition of the ability to behave in accordance with the societal expectations.

Major Milestones are

AGE	MILESTONE
2-3 months	Shows social smile
3-6 months	Regards face
6-9 months	Can recognize strangers
9-12 months	Shows fear of strangers Shows anger, anxiety, excitement and affection

	Waves bye-bye
1-2 years	Can imitate parent's domestic activities Shows ownership
2-3 years	Gets easily separated from mother
4-5 years	Shows jealousy of siblings Looks for parental encouragement and support

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Child regards face by ----------age
2. Child shows social smile by ----------age
3. Child recognizes strangers by ----------age
4. Child shows fear of strangers by ----------age
5. Child shows anger, anxiety, excitement and affection by -------age
6. Child waves bye-bye by ----------age
7. Child imitates parent's domestic activities by ----------age
8. Child shows awareness of ownership by ----------age
9. Child separates easily from mother by ----------age
10. Child shows jealousy of siblings by ----------age
11. Child looks for parental encouragement and support by --------age

5) Sexual Development / Sex role Development

Sex roles are patterns of behavior for members of the two sexes approved and accepted by the social group with which the individual is identified**.**

Major milestones are

AGE	MILESTONE
1-2 years	Obtains pleasure in urinating and defecating Identifies their own sex
2-3 years	Indicates act of passing urine during day time Indicates act of passing stool
3-4 years	Indicates act of passing urine during night time
4-5 years	Shows affection towards opposite sex parent

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Child obtains pleasure in urinating and defecating by ----------age
2. Child identifies their own sex by ----------age
3. Child can indicate the act of passing urine during day time by---age
4. Child can indicate the act of passing urine during night time by -----age
5. Child can indicate the act of passing stool by ----------age

6) Spiritual Development

Is learning about rituals, beliefs and symbols specific to religion

AGE	MILESTONE
2-3 years	Can imitate religious behavior such as bowing head in prayer
4-5 years	Can participate in family religious activities

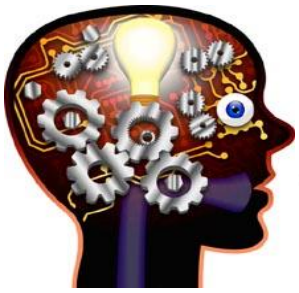
Self-Study Exercise

Fill in the blanks with appropriate answers

1.Child imitates religious behavior such as bowing head in prayer by ----------age

2.Child participates in family religious activities by ----------age

7) Cognitive Development / Development of Thinking/Understanding



Cognitive development is the ability to grasp the nature, significance,

or explanation of something and to have a clear or complete idea of it.

Major milestones are as follows

AGE	MILESTONE
2-3 months	can discriminate sweet, sour, bitter, and salty tastes
3-6 months	can respond to familiar sounds
6-9 months	can distinguish between inanimate and animate objects
1-2 years	can distinguish between "you" and "me
2-3 years	can identify several objects within one picture tries to explore new things can say morning and evening
3-4 years	can understand past, present and future can use symbols for communication

4-5 years	can understand size, shape and length can count to 5 can tell you their street and town

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Child tries to explore new things by ----------age
2. Child can understand past, present and future by ----------age
3. Child can use symbols for communication by ----------age
4. Child can say morning and evening by ----------age
5. .Child can understand size, shape and length by ----------age

8) Moral Development

Is the development of the behavior in conformity with moral code (manners, customs and folkways) of the social group.

Major milestones are as follows

AGE	MILESTONE
1-2 years	Can talk about good and bad
2-4 years	Can understand that punishment is for wrong doing
4-5 years	Can understand rules and regulations and follows instructions

Self-Study Exercise

Fill in the blanks with appropriate answers

1. Child can talk about good and bad by ----------age
2. Child understands the punishment for wrong doing by ----------age
3. Child understands rules and regulations and follow instructions strictly by ----------age

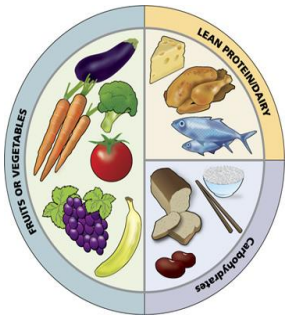
UNIT-III: ROLE OFNUTRITION AND PLAY ON GROWTH AND DEVELOPMENT OF UNDERFIVE CHILDREN AND ANTICIPATORY GUIDANCE

LEARNING OBJECTIVES:

After studying this unit mothers will be able to:

1. Explain the importance of Exclusive breastfeeding
2. Select weaning and supplementary foods as per the age
3. Identify and meet play needs of underfive children as per the age
4. Select toys for their underfive children as per the age
5. List common accidental hazards among under five children
6. Prevent common accidental hazards among underfive children

NUTRITION



Nutrition plays a vital role in the development of optimal potentials among underfive children.

The diet patterns during these years influence their health and risk of sickness in later years. Nutritional needs varies with each stage of growth and development

Newborn

- Breast milk is the best food. Feed with only breast milk till six months.
- Baby gets all nutrition through the breast milk
- Water, cow's milk is not required
- Feed whenever the baby cries
- Feeding the child with only breast milk without any thing else is called "Exclusive Breast feeding".

Six Months

- Continue breast milk.
- Start cereals like rice, ragi, or wheat porridge
- Start with liquid form and 3-4 table spoons
- Gradually shift to semi-solid form and 4 or more table spoons
- This meets the iron requirement of your baby.
- Continue 4-5 breast feedings and you can give well cooked and mashed vegetables a month later

- Fruit juice can be started with one month interval from vegetables. One part juice with two parts of water, once or twice a day.
- Use spoon and cup only not in the bottle.

Nine Months

- Continue 3-4 feedings of breast milk and 4 or more tablespoons of cereal, vegetables and fruit one or two times each day, you can now start to give more protein containing foods.
- These include well-cooked, strained or ground plain meats (chicken, mutton), cheese , or egg yolks (no egg whites as there is a high chance of allergic reactions in infants less than 12 months old).
- Start with 1-2 tablespoons and increase to 3-4 tablespoons once each day.
- Start soft finger foods at this age
- Give soft, bite-size pieces of food, such as soft fruit and vegetable pieces when you can sit and feed the child
- Fruit juice in full strength can be given in cup

Twelve Months – Three Years

- Continue breast milk up to 2 years
- Whole cow's milk can be given
- Feed the child like rest of the family members.
- Practice 3 meals and 2 snacks, reduce dairy products
- Offer variety of foods and encourage self feeding skills

Preschool years

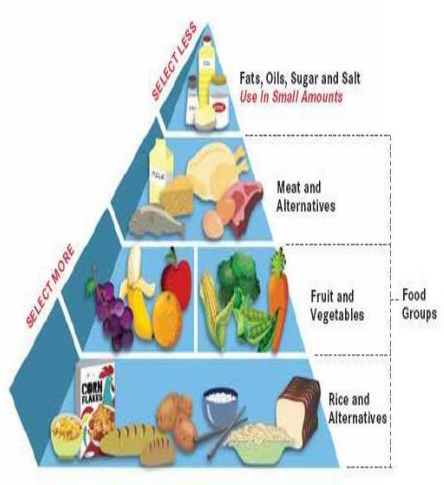
Encourage to develop healthy food habits like:

- Variety of food sources
- Physical activity to balance the food intake
- The diet should have grains, vegetables, fruits, low fat and cholesterol, moderate in sugar and salt to meet their calcium and iron needs.

Include the following as one serving at any one time during the day

Grain group include 1 slice of bread, 1/2 cup of cooked rice, 1/2 cup of cooked cereal. Give 6 servings from this group.

Vegetable group include 1/2 cup of chopped vegetables, or 1 cup of leafy vegetables. Feed at least 3 servings from this group.



Fruit group include1 piece of fruit, 3/4 cup of 100% fruit juice, 1/4 cup of dried fruit. Feed at least 2 servings from this group.

Milk group servings include 1 cup of milk or yogurt or 2 ounces of cheese. Feed at least 2 servings from this group.

Meat group include 2 to 3 ounces of cooked meat, poultry or fish. 1 egg for 1 ounce of meat can be exchanged. Feed at least 2 servings from this group.

PLAY

Play is an important asset for child's growth and development. Through play the child grows, develops, learns and ultimately matures.

The Benefits of Play to a child

Emotional-Behavioral Benefits

- Reduces fear, anxiety, stress, irritability
- Creates joy, intimacy, self-esteem and mastery not based on other's loss of esteem
- Improves emotional flexibility and openness
- Increases calmness, resilience and adaptability and ability to deal with surprise and change

Social Benefits

- Enhances feelings of acceptance of difference
- Increases empathy, compassion, and sharing
- Creates options and choices
- Decreases revenge and need for self defense

Bio-Physical Benefits

- Decreases stress, fatigue, injury, and depression
- Increases range of motion, agility, coordination, balance, flexibility, and fine and gross motor exploration
- Integrates sensorimotor, kinesthetic and emotional responses

Cognitive Benefits

- Increases efficiency of brain function

TYPES OF PLAY

1. **Solitary play:**

Child plays alone

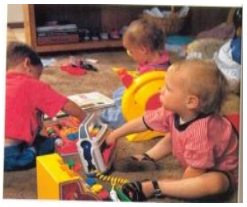
Toys that can be given are:

Birth to 2 months- music boxes, singing, , rocking and cuddling.

3-6 months- rattles, stuffed animals, soft toys with contrasting colours,

noise making objects which can be easily grasped

6-12 months- large blocks, push and pull toys, soft balls, cups and other objects which fit into one another



2. **Parallel play:**

Child plays independently with the toys by looking at the other children nearby. 1-3 years child will be engaged in this type of play.

Toys preferred are:

Kitchen set, toy phone, tricycle, soft ball and bat, pencil and paper, wooden puzzles, educational television shows, music, story books.

3. **Associative play:**

Pre-schooler (3-5 years) child will be playing this type of play. She will play with other children. Child learns borrowing and lending through this type of play.

- **Toys preferred are**:

Simple games, puzzles, nursery rhymes, dolls and doll clothes, pen and paper, glue, scissors, educational television shows, music, story books

Self-study exercise

1. ----------type of toys should be given to the child to play from birth to 6 months
2. ----------type of toys should be given to the child to play from 6 months to 1 year
3. ----------type of toys should be given to the child to play from 1 year to 3 years
4. ----------type of toys should be given to the child to play from 3 years to 5 years
5. Exclusive breast feeding should be given till ----------age
4. Rice cereal can be given to the child at ---------- age
5. Fruits or vegetables can be given to the child at ----------age
6. ---------- No. of meals to be given to the child between 1year to 5 years
7. ---------- food to be given to the child between 1year to 5 years

UNIT-IV: ANTICIPATORY GUIDANCE

LEARNING OBJECTIVES:

After studying this unit mothers will be able to:

1. List common accidental hazards among under five children
2. Provide safe, encouraging, stimulating play environment for underfive children
3. Prevent common accidental hazards among underfive children

ANTICIPATORY GUIDANCE

What to Do - Take Action

The anticipatory guidance means, guiding the mothers to understand what to expect from their child according to their age and stage of growth and development, so that they can provide needed support, stimulation, and encouragement to their child.

Accidental injuries to infants and young children are often serious, but are largely preventable with appropriate information and safe practices. Common accidents and their preventive measures are as follows:



Age	Accidents	Prevention
0-6 months	Falls	Do not leave the child alone on raised surfaces
6mths-1 yr	Foreign body aspiration,Cuts, falls,Choking	Keep small objects and dangerous substances out of reach Do not allow to play with plastic bags
1-2 years	Falls, burns, drowning, and poisoning	Never leave alone, place hot drinks out of reach use dummy plugs to cover unused sockets use gates for stairs
2-3 years	Falls, burns, drowning, and poisoning	Place matches and lighters out of sight and reach Do not leave alone near a

		bathtub, bucket, hot iron, kitchen
3-4 years	Falls, burns, drowning and poisoning	Keep the medicines in closed and locked cupboards Instruct to hold on firmly the play groundequipments
4-5 years	Falls, burns, drowning, Poisoning, Motor Vehicle accidents	Teach road safety Continue safety training

Anticipating potential dangers and taking simple measures will go a long way towards preventing suffering and making your home a safe place for your little ones.

Self Study Exercise

1. Common accidental hazards from birth to one year are----------
2. One of the preventive measures to prevent accidental hazards from birth to one year is----------
3. One of the common accidental hazards from 1 year to 3 years is--------
4. One of the preventive measures to prevent accidental hazards from 1 year to 3 years----------
5. One of the common accidental hazards from 3 years to 5 years is------
6. One of the preventive measures to prevent accidental hazards from 3 years to 5 years is----------

UNIT-V –CHILD REARING PRACTICES

LEARNING OBJECTIVES:

After studying this unit mothers will be able to:

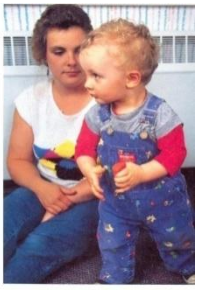
1. Give the meaning of positive child rearing practices
2. Provide stimulating, non-restricted environment for underfive children growth and development.

Child rearing practices are those practices, which are to be adopted to rear a child. It includes total care of a child from basic needs to protect the rights of children.

Positive child rearing practices lead children to feel safe, independent, purposeful and capable completing tasks. Negative practices lead children to feel insecure, self-doubtful, fearful of failure, inferior, incapable and inadequate.

Positive child rearing practices helps children:

- To trust
- To be independent and self-reliant
- To function positively in their environment
- To be self-disciplined
- To experience themselves as competent



IT'S WHAT YOU DO, NOT WHAT YOU SAY.

GUIDE-LINES FOR THE MOTHER TO ADOPT POSITIVE CHILD REARING PRACTICE

TWO MONTHSto NINE MONTHS

- ✓ Show your affection by holding, cuddling, talking, singing and rocking your baby as much as you can.
- ✓ Every interaction of you with your child is stimulation to their brain development

Encourage your baby to "speak" by talking to him or her during dressing, bathing, feeding, playing, walking

- ✓ Stimulate your child with age- appropriate toys. Hang a rattle, so that your infant can begin watching and reaching for it.

NINE MONTHSTO TWO YEARS

- ✓ Keep up a constant chatter with your 9-month-old child. Talking to your child while dressing, bathing, feeding, playing, walking and driving encourages speech development.

  - ✓ Encourage play with age-appropriate toys.
  - ✓ Begin to set limits by using verbal "no's," distraction, removing the object from the baby's sight or removing the baby from the object.
- ✓ Never use spanking as a form of discipline, even a "little" tap on the hand. If you become angry with your baby, put the child in his or her crib for one or two minutes. This will allow you to calm down and allows your baby to realize he or she has done something wrong.
- ✓ Consistence of discipline is very important - adhering to the limits you set keeps your child safe.

- ✓ Praise the one year old for good behaviour.
- ✓ It is important to teach the child the word "no." Saying "no" in a stern voice with good eye contact is almost always effective in this age group.
- ✓ Discipline should be consistent to be effective.
- ✓ To discipline a one year old, use distraction, loving restraint, removal of the object from the toddler or the toddler from the object.
- ✓ Encourage play with age-appropriate toys.
- ✓ Encourage your child to play alone with supervision and with other toddlers.

- ✓ Remember that aggressive behaviour - hitting and biting - are common at this age

TWO YEARSTO FOUR YEARS

Tell stories byusing picture books to improve your child's language. Reading books to your child will help with language development.

- ✓ Take child to play ground to explore out side environment.
- ✓ Allow the child tp play with other children
- ✓ Limit television viewing. Do not use the TV as a baby sitter or as a substitute for interaction with your child. Watch children's programs with the child when possible. Turn the TV off during meals.
- ✓ Do not worry if your child becomes curious about body parts. This is normal at this age. It is best to use the correct terms for genitals.
- ✓ Arrange for small family outings.
- ✓ Teach older siblings to share things with the younger ones.
- ✓ Reward the child for their good behavior and achievements.
- ✓ Allow the child to do some arrangement activities like toys, kitchen articles.

FIVE YEARS

- ✓ Continue reading to your child or read together.
- ✓ By the end of this year many 5-year-olds can recognize simple words and may even be reading. Praise your child's progress.
- ✓ Children this age show concern for each other so mother should encourage diversity, respect and tolerance.
- ✓ The 5-year-old enjoys crafts, coloring and painting.
- ✓ It is not unusual to have occasional accidents at night and during play. Be understanding and do not make a big deal out of it. However, if it happens frequently, it would be a good idea to discuss the matter with the child's doctor.
- ✓ Enhance your 5-year-old's experience with trips to parks, libraries, zoos and other points of interest.
- ✓ Teach your child the difference between right and wrong.

- ✓ Begin age appropriate chores.
- ✓ Always show affection.
- ✓ A 5-year-old is usually imaginative and has lots of energy.
- ✓ Be sure to praise children. Building self-esteem is very important at this age.
- ✓ Give your child encouragement and praise not only for completing a task but also while working on the task.
- ✓ Avoid physical punishment - it only promotes fear and guilt and teaches the child that violence is acceptable in certain situations. Instead, send the child to a quiet, boring place without anything to do for five minutes as a form of discipline.

SELF STUDY EXERCISE

Say whether the following statements are True or False

1. Children need to be allowed freedom to explore their world in safety
2. Children who are praised will think too much of themselves
3. Strict discipline is the best way to raise children
4. It is normal for a 4 year child to have imaginary friends
5. You should worry if 3 year old child becomes curious about body parts.
6. Time-out is an effective way to discipline children
7. You should never say No to child's behavior
8. Do not limit your child's television viewing
9. Hitting and biting are common at one year of age
10. Never use spanking as a form of discipline

CONCLUSION

Ultimately, mothering is not all that difficult if you use your sixth sense and discrimination power. To prevent confusion, ignore what neighbors and other busybodies say. Remember, " Every child is different, every mother is different, every illness or behavior problem is somewhat different from every other" and your child is unique To sum up, be your own mother.

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