CHAPTER –6

SUMMARY
Summary includes the objective, hypothesis, tool used for study. Human growth from infancy to maturity involves great changes in body size and appearance. The growth process is not a steady one: at some times growth occurs rapidly, at others slowly. Individual patterns of growth vary widely because of differences in heredity and environment. Children tend to have physiques similar to those of their parents or of earlier forebears; however, environment may modify this tendency. Living conditions, including nutrition and hygiene, have considerable influence on growth. Growth and development goes side by side, and both have profound effect upon each other. When a child is born, he passes through various stages and ultimately a whole picture of a person emerges. Growth refers to an increase in physical size of the whole body or any of its parts. It is simply a quantitative change in the child’s body. It can be measured in Kg, pounds, meters, and inches. The assessment of growth and development is very helpful in finding out the state of health and nutrition of a child. Continuous normal growth and development indicate a good state of health and nutrition of a child. Abnormal growth or growth failure is a symptom of disease. Hence, measurement of growth is an essential component of the physical examination. The process by which living organisms obtain food and use it for growth, metabolism, and repair. The stages of nutrition include ingestion, digestion, absorption, transport, assimilation, and excretion. A balanced diet for children should include a variety of healthful fruits and vegetables, grain products, lean proteins and dairy products.

A poor diet can cause several physical problems in children. A diet too high in fat and calories can lead to obesity, which interferes with physical fitness,
but also raises the risk of heart disease, diabetes and cancer. A diet lacking in proper nutrition can also result in stunted growth and bone disorders. Lack of a nutritious diet also affects energy for physical pursuits.

Thus, the present study was conducted on “A study to assess the physical growth and nutritional status of school going children in selected areas of Jabalpur (M.P).”

**OBJECTIVES OF THE STUDY**

- Assess the physical growth of school going children.
- Assess the nutritional status of school going children
- Associate physical growth and nutritional status of school going children with the socio-demographic variables.
- Develop and test self-instructional module on physical growth and nutrition school going children.

**HYPOTHESES**

**H1-a)** There will be significant association between physical growth and nutritional status of school going children with type of family.

**H1-b)** There will be significant association between physical growth and nutritional status of school going children with family income.

**H1-c)** There will be significant association between physical growth and nutritional status of school going children with education of parents.
**H1-d)** There will be significant association between physical growth and nutritional status of school going children with age of children.

**H1-e)** There will be significant association between physical growth and nutritional status of school going children with weight of children.

**H1-f)** There will be significant association between physical growth and nutritional status of school going children with immunization of children.

**H1-g)** There will be significant association between physical growth and nutritional status of school going children with diet of children.

**H1-h)** There will be significant association between physical growth and nutritional status of school going children with number of children.

**RESEARCH METHODOLOGY**

**RESEARCH APPROACH:**

A non experimental research design is used for this study. This approach permits to find out the problem by observational method and evaluative approach. In this present study the investigator wish to assess the gain in knowledge of mothers after the administration of self instructional module on growth and nutritional status of school going children (9-12yrs). Evaluative approach helps to explain the effect of independent variable on the dependent variable.
**RESEARCH DESIGN**

In the present study the investigator selects the non-experimental research design to observe the physical growth of school going children and nutritional status and its relationship and administer a self-instructional module to assess the gain in knowledge regarding growth and nutrition of school going children (9-12yrs). The research design used in the study is the pre-experimental single group pre-test, post test design.

**SETTING OF THE STUDY**

This study was conducted at Govt. Pre-primary training institute, St. Pauls School, Saraswathi Shishu Mandir Garhaphatak, Saraswathi Shishu Mandir, Jainagar, Govt. primary and middle school, Kacchpura, Jabalpur, Madhya Pradesh. The setting is selected because of availability of sample, feasibility of conducting and ethical clearance.

**POPULATION**

The population of the present study comprised of school going children (9-12yrs of age) of selected school of Jabalpur. The mothers of the school going children is also selected.
SAMPLE AND SAMPLING TECHNIQUE.

Purposive sampling was to be the most appropriate. In present study school going children 9-12yrs of Govt. private schools that are Pre-Primary Training Institute Wright Town Jabalpur, St. Pauls School, Saraswathi Shishu Mandir Garhaphatak, Saraswathi Shishu Mandir, Jainagar, Govt. primary and middle school, Kacchpura, Jabalpur, Madhya Pradesh. 100 mothers of those children were selected, Jabalpur was selected. It was suitable in keeping in view the time provided for data collection and the study.

INSTRUMENT

The study aims at observing the physical growth and nutritional status of school going children it consist of 5 parts

01. Observational profile for physical growth

02. Observational profile for nutritional status

03. Demographic status of parents

04. Checklist

05. Self Instructional Module

THE TOOLS

The tool was structured item consist of 3 sections

Section –A; Deals with demographic data such as type of family, occupation of parents, income, education of parents, illness of child, place of delivery, age of children, sex, vaccination, tendency to go to school, number of
children, diet, food decision, total number of children in home, responsibilities of feeding, exercise, members in family.

**Section-B;** Deals with the observational profile of the child. It’s divided into 2 parts

1. **Part A**-Deals with the measurement of physical growth as height, weight, head circumferences and chest circumferences.

2. **Part B**-Deals appearance of child, mid arm circumference, condition of nail, hair, teeth, gums, tongue, eye, lips, skin and daily intake of meals.

**Section –C:** it refers to the checklist

**Section –D;** it refers to the written and valid information booklet about nutrition and physical growth of children. It includes introduction, definition, importance of assessing growth and development, nutrition, importance of nutrition, physical growth, nutritional requirement of school going children, feeding school children, impact of nutrition of physical growth, improvisation of health, menu plan.

**CONTENT VALIDITY**

Content validity refers to the degree to which the items in an instrument adequately represent the universe of content. The prepared instrument along with the objectives, operational definitions for validation were submitted to experts which included nursing experts, Pediatrician and Statistician to establish content validity.
PILOT STUDY

Pilot study is a trial run study conducted before the actual study in a different population with similar characteristics. After obtaining the permission from the authority the pilot study was conducted on September 13 to find the effectiveness of tool and study in terms of enhancement of knowledge regarding growth and nutritional status of school going children. The investigator used purposive sampling technique to select the sample from total population .100 samples that is 10% of the total samples were selected for the study and these were excluded from the final study. Assessment of physical growth and nutritional status of school going children was done using observational checklist then it was followed by administering self-instructional module on growth and nutritional status of school going children of 10 mothers among these school going children. The pre-test was administered to the mothers and on the 8th day a post test was administered using the same tool which was used in pre-test.

MAJOR FINDINGS

Findings related to the physical status of school going children

Among 500 school going children the weight of the child 24% are below 26 kgs, 44% are between 26.1- 32 kgs, 27.6% are between 32.1-38 kgs, in that majority are of 11 years and 12 years respectively; 4.8% are above 38 kgs. The height of the child is 33% are below 130 cms, 36.4% are between 131-135 cms 25% are between136 -140 cms, 5.6% are above 140 cms. The head
circumference of the child in which 30.6% are below 50 cms, 44.6% are between 50.1- 52 cms, 20% are between 52.1-54 cms, 4.8% are above 54.1cms. The chest circumference of the child in which 19.8% are between 65cms- 68 cms, 53.8% are between 68.1cms- 71cms, 22.2% are between 71.1cms -73 cms, 7.8% are above 73.1cms.

Findings related to the nutritional status of the school going children

Among 500 school going children, The appearance of the Childs body type in which 70% are in ectomorph 25.4% are mesomorph,4% endomorph ,the posture of the Child 99.2% comes under the erect posture in 0.4% has Kyphosis and 0.4% had scoliosis, the gait of the child 0.6% had spastic gait,0.8% had step page gait, 0.6% had waddling gait and 97.6%were having co-ordinate gait, the body odour of the children in ich 93.4% are hygienic, 4.6% smells acidic, 5% are foul smelling,5% are unhygienic, the mid arm circumference of the child. in which 12% are under 15.5cms-16.5cms,5.6% are under 14.5cms-15.5cms ,3.8% are under 16.5cms-17.5cms ,0.8 % are greater than 17.5cmsMid arm circumference (Female)in which 21.6% are under 16.5cms-17.5cms,11.6% are under 17.5cms-18.5cms ,10% are less than16.5cms, 1.6 % are greater than 18.5cms,The condition of the nail in which 96% are having terry nails ,1.8% are having beaus lines ,1.2% are having muehrckes lines, 1% are having nail pitting, the deformities of the nails of children in which 64.8% are having no deformities nails,11.8% are having green nails,3.6% are having ingrown nails, 1.8% are having green nails ,the capillary refill of the children in which 54.6% refills in 3seconds, 42.8% refills in more than 3seconds,2.2% refills in 2seconds,0.4% refills in
less than 2 seconds, the condition of the hair scalp in which 34.6% are having clean hair, 29.4% are having dandruff, 21.6% are having lice on hair, 14.4% are having split, the texture of the hair in which 36.2% are having wooly hair, 29% are having dry hair, 20% are having silky hair, 14.8% are having coarse hair, the teeth numbers in which 48.6% are having 21-24 teeths, 44.2% are having 16-20 teeths, 6.8% are having greater than 24 teeths, 0.4% are having less than 15 teeths, the number of dental caries in which 74.2% are having clean teeth, 22.8% are having 1-3 caries tooth, 2.4% are having 4-6 caries tooth, 0.6% are having above 7 tooth, the gums color in which 92.2% are having pink color gums, 3.6% are having pale color gums, 2.6% are having black color gums, 1.6% are having brown color gums, the tongue color in which 69% are having pink color tongue, 21.2% are having coated tongue, 9.8% are having pale color tongue, 0% are having blue color tongue, the eye acuity visual loss of the children in which 79% had normal sight, 14.6% had short sight, 6.4% had long sight, 0% had vision loss, the eyelid of the children in which 62.4% had normal eyelids, 19.2% had swollen eyelids, 6% had dehydrated eyelids, 5% had thinning of skin eyelids, the conjunctiva color in which 46.6% had pale conjunctiva, 27.6% had white conjunctiva, 14.8% had red conjunctiva, 1.1% had yellow conjunctiva, the sclera color in which 55.4% had white sclera, 22.4% had pale sclera, 16.4% had yellow sclera, 5.8% had red, the pupils reactions to light in which 96% showed constrict pupil, 4% showed dilated pupil, 0% had no reaction and was normal reaction, the color of the lips of the children in which 57% had pink lips, 39.6% had black lips, 3.4% had pale lips, 0% had blue lips, the symmetry of lips in which 49.6% had thin lips, 47.4% had normal lips, 1.6% had
cracked lips, 1.4% had cleft lips, the skin color of the children in which 28.6% had white skin, 28% had Wheatish skin, 27.8% had black skin, 15.6% had pink skin, the temperature of the skin in which 43.4% had normal temperature, 26% had warm temperature, 16.2% had cool temperature, 14.4% had fever. Condition of skin in which 51.6% had dry skin, 36.8% had normal skin, 11.6% had oily skin.

Section-2

Findings related to the demographic variables of the school going children

Among 500 school going children 60.4% belong to nuclear, 39.6% belong to joint family, 11.4% work in agricultural fields, 9% work as laborers, 31.8% do not work, 21% have their business, 26.8% work in private, 24.6% work in agricultural fields, 24.4% work as laborers, 2.8% do not work, 24% have their business, 24.2% work in private, 4.2% have income between Rs 1-5000, 44.6% have income between 5001-10000, 51.2% have income more than 10000, 4% are illiterate, 13.4% are primary educated, 33% come under middle, 28.2% come under intermediate, 17% are, 6.4% are post graduate, 24.8% have taken home treatment, 30% have taken treatment from private doctors, 37.2% have taken treatment from government doctors, 8% have taken ayurvedic treatment, 50% had home delivery, 50% had hospital delivery, 25% are of 9 years; 25% are of 10 years; 25% are of 11 years; 25% are of 12 years, 37.4% were male children, 62.6% were female children, 95.2% are vaccinated, 3% are partially vaccinated, 1.8% are not vaccinated,
81.8% have satisfactory tendency to go to school, 12.2% go to school through pressure, 4.8% have no tendency to go to school, 47% are vegetarians, 4.2% are non-vegetarians, 48.8% are both, 11.4% had 1 child, 34.8% had 2 children, 32.6% had 3 children, 11% had 4 children, 10.2% had >5 children

**Findings related to the checklist**

This describes about the knowledge and practices of mothers of school going children (9-12 years). It was assessed for 100 mothers. 66% of mothers had knowledge about the government schemes for children, 18% of mothers knew about the nutritious food, 54% of mothers had made food timetable for their children, 21% mothers say, they have knowledge regarding the food nutrients, 100% of mothers gained weight during pregnancy, 14% of mothers suffered from anemia during pregnancy, 23% of mothers had regular antenatal checkups, 33% of mothers had balanced diet during pregnancy, 45% of mothers had normal weight baby, 84% of mothers said their baby cried immediately after birth, 75% of mothers said they had to hospitalize the child for some reasons after the birth, 84% of mothers breastfed their child for 6 months, 98% of mothers started weaning at 6 months, 14% of mothers recorded the weight of the child, 74% of mothers had given vitamin supplements between 9 months to 3 years, 75% of mothers gave breakfast according to the child’s choice, 91% of mothers said food is prepared in a hygienic method, 73% of mothers said that the child takes meal with the family, 67% of mothers use purified water, 88% of mothers said that their child washed hands before having the food, 82% of mothers said that the child takes the food at proper time, 80% of mothers used iodine salt in food.
,46% of mothers gave their child a cup of milk or milk item daily,61% of mothers knew the importance of child food,89% of mothers fulfilled the requirements of food needed by the child,71% of mothers said that the child had seasonal food,80% of mothers had their child’s eyes checked up,69% of mothers said that their child is anemic,39% of mothers said that their child had cold, cough and fever,68% of mothers said that their child had stomach ache and vomiting or diarrhea.

Finding related pre-test score post test score

Majority of pre-test samples (73%) had average knowledge and (26%) had poor knowledge. In the post test (100%) had adequate knowledge. The mean post-test knowledge scored (16.83) is higher than the mean pre-test knowledge score (5.72). The mean difference between pre-test and post test score is 11.1. The standard deviation score for pre-test is 1.54 and for post-test is 1.79. The obtained t value is 2.90 is significant. Based on the objectives of the study the findings of pre-test knowledge score of mothers regarding physical growth and nutritional status show that they were able to answer to some extent. The study shows that the mothers in pre-test were having a mean of 5.72 (n=100) of knowledge on physical growth and nutritional growth. Mother’s pre-test level of knowledge shows that (73%) had average knowledge and (26%) had poor knowledge. Considering the aspects of physical growth and nutritional status they are having below average knowledge. The findings of the study revealed a significant increase in the post test knowledge score after the administration of booklet. In pre-test the mean score was 5.72 and in post-test the mean was 16.83. The mean
difference between pre-test and post-test knowledge score is 11.1. Mothers pre-test knowledge on physical growth and nutritional status shows that (73%) had average knowledge and (26%) had poor knowledge. After the administration of booklets the post test level of knowledge on selected first aid measures shows that 100% of mothers had adequate knowledge, none of the mothers had moderately adequate knowledge or inadequate knowledge. This result is due to the effectiveness of booklet. It is revealed that there is significant difference between the pre-test and post-test knowledge scores. Comparison was done using mothers paired t test and the value is $t= 2.90$, which is significant.

Findings correlation between physical variables and demographic variables of the school going children

Among 500 schools going children the association between physical variables with demographic variables is statistically tested by applying chi-square test. The weight of the child was most significant. The head circumference of the children was found significant. Height of the child and chest circumference of the children was not significant.

Findings correlation between nutritional status and demographic variables of the school going children

Among 100 school going children the association between nutritional status with demographic variables is statistically tested by applying chi-square test. In, the appearance of the child body type and the gums colour was found
most significant. The conditions of the hair scalp, tongue colour, conjunctiva
colour, lips colour, symmetry of lips and temperature of skin were
significant. Other variables were not significant.