Effectiveness of Planned Teaching Programme on Knowledge and Biophysiological Parameters of Adolescent Girls Regarding Management of Menstrual Disorders and Nutritional Anemia.

Thesis Submitted

to

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH

For the requirement of Degree

DOCTOR OF PHILOSOPHY
[INTERDICIPLINARY-NURSING]

Under

Faculty of Allied Health and Basic Health Sciences.

By

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UNDER THE SUPERVISION OF

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SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH
(A Deemed to be University)

Community Health Nursing Department,

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Tamaka Kolar, Karnataka.

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INDEX

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

1. BMI; Body mass index
2. DRS; Devarayasamudhra
3. GHS; Government High School
4. K-JHS; Kembodi Janatha high school
5. M-GHS; Mudhuvadi Government High School
6. U-GHS: Uthhuru Government High School
7. H-GHS; Hanumana halli Government High School
8. Hb%; Hemoglobin percentage
9. NS: not significant
10. SS :Statistically significant
11. SD: Standard deviation
12. WHO: world health organization

LIST OF ANNEXTURES

Annexure	Content
I	Ethical clearance certificate
II	Permission letter from Govt. High School head master to conduct the study
III	Concern from the adolescent girls.
IV	Certificate of language translation of the tool and lesson plan
V	Certificates on content validity of tool and lesson plan
VI	List of experts validated the tool and lesson plan
VIII	Structured knowledge questionnaire on management of menstrual disorders and nutritional anemia in English, Kannada with key and observation scale on BMI & HB%
IX	Planned teaching plan on management of menstrual disorders and nutritional anemia in English
X	Planned teaching plan on management of menstrual disorders and nutritional anemia in Kannada

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DECLARATION BY THE CANDIDATE

I Mrs.Malathi K.V hereby declare that this thesis entitled ''**Effectiveness of Planned Teaching Programme on Knowledge and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia in selected High Schools of Rural Kolar"** is an original research work carried out by me for the award of **Doctor of Philosophy** in the subject Interdisciplinary [Nursing] under the guidance of **Dr. G. Vijayalakshmi,** Principal, Sri Devaraj Urs College of Nursing. No part of the thesis has formed the basis for the award of any degree or fellowship previously elsewhere.

Malathi

Signature of the Candidate

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This is to certify that the research work contained in the thesis entitled "**Effectiveness of Planned Teaching Programme on Knowledge and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia in selected High Schools of Rural Kolar"** in the subject Interdisciplinary[Nursing] carried out by Mrs. Malathi K V (Reg.No.13phD2101) for the requirements of the award of degree **Doctor of Philosophy** (Interdisciplinary[Nursing]), SDUAHER under the guidance **Dr. G. Vijayalakshmi,** Principal, Sri Devaraj Urs College of Nursing. Any part of this thesis has not been submitted elsewhere for the award of any degree or fellowship previously.

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Sujatha. M.P

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With grateful heart…….

Signature of the Candidate

Date: **(Mrs. Malathi K V)**

Place: Kolar

ABSTRACT

Background:- India is the one of the fastest growing youth populations in the world with an estimate 190 millions adolescent in which 22% are girls. A vast majority of adolescent girls in India are suffering from reproductive health morbidities which may affect normal life of adolescent and young adult women.[3] Adolescent is vulnerable period in the human life cycle for the development of nutritional anemia which affects both sexes and all age group.1Adolescence itself is a period of growth and development and requires special attention to maintain and promote health and wellbeing.[2]

Objectives:

Primary objective:

1. Assess the Knowledge of Adolescent Girls on Management of Menstrual Disorders & Nutritional Anemia using Structured Knowledge Questionnaire

2. Evaluate the Effectiveness of Planned Teaching Programme on Level of Knowledge of Adolescent Girls on Management of Menstrual Disorders & Nutritional Anemia by comparing Pre & Post test Knowledge Scores.

3. Determine the Association between Level of Knowledge of Adolescent Girls on Management of Menstrual Disorders & Nutritional Anemia with selected Socio demographic Variable after implementation of Planned Teaching Programme.

Secondary objectives:

1. Assess the Biophysiological Parameter of Adolescent Girls using Observational Scale
2. Evaluate the Effectiveness of Planned Teaching Programme on Biophysiological Parameter of Adolescent Girls by comparing Pre & Post test observational values.
3. Determine the association between Biophysiological Parameter of Adolescent Girls with selected Socio demographic Variable after implementation of Planned Teaching Programme

4. Correlate between Knowledge Scores & Biophysiological Parameters after implementation of Planned Teaching Programme.

Settings and Design:- The setting of the study was selected government high schools (GHS) of rural Kolar such as Devarayasamudhra GHS, Hanumanahalli GHS, Kembodi GHS, Mudhavadi GHS, Harati GHS and Uthuru GHS, of rural Kolar Taluk and the study design was quasi experimental with one group pre test post test.

Methods and Material:- A quasi experimental with one group pre and post test design was adopted for the study. The ethical clearance was obtained from SDUAHER ethical committee Based on the objectives of the study a structured knowledge questionnaire and lesson plan content on management of menstrual disorders and Nutritional Anemia and biophysiological parameters was prepared in English then it was translated to Kannada. The tool and lesson plan content was sent to research and subject experts for its content validity. After obtaining permission from head master of the school, the researchers approached 8^{th}, 9^{th} & 10^{th} standard girl students then explained them about statement of problem and objectives of the study. Then using simple random sampling technique-lottery method 400 adolescent girls were selected from five govt high schools who met inclusion criteria. After this an assessment of knowledge and biophysiological parameters was done. Followed by planned teaching programme on management of menstrual disorder and nutritional anemia was conducted on the same day by using charts, LCD and black board for about 45 min. After 30 days of teaching programme a post test was conducted using same tool. The data was collected from11/01/2017 to 10/05/2017. Then the collected data was analysis by using Descriptive statistics & inferential statistics.

Results

Based on the objectives of the study findings are presented as follows ;

I: Distribution of the adolescent girls based on their socio demographic characteristics

N=400

Sl. No.	Variable	Frequency	Percentage
1	**Age** ;		
	13-14 years	257	**64.25**
	15-16 years	243	60.75
2	**Type of family**	240	**60**
	Nuclear	160	**40**
	Joint		
3	**Type of food**		
	Vegetarian	127	31.75
	Mixed	273	**68.25**
4	**Education of father**		
	Primary education	205	**51.25**
	SSLC	155	38.75
	PUC	30	7.5
	Degree	10	2.5
5	**Occupation of father**		
	Agriculture	281	**70.25**
	Daily wages	88	22
	Private employee	16	4
	Government employee	15	3.75
6	**Education of mother**		

	Primary education	203	**50.75**
	SSLC	161	40.25
	PUC	34	8.5
	Degree	02	0.5
7	**Occupation of mother**		
	Agriculture	220	**55**
	Daily wages	152	38
	Private employee	18	4.5
	Government employee	10	2.5
8	**Source of information**		
	Family members	143	**35.75**
	Friends	90	22.5
	Teachers	94	23.5
	Mass media	73	18.5

The socio-demographic data of adolescent girls revealed that Majority(64.25%) of them were in the age group of 13-14 years, most (60%)were them from nuclear family, majority (68.25%) of them were taking mixed diet, maximum (father-51.25% and mother-50.75%) of parents had primary education and most (father-70.25% and mother-50%) of them were formers and 30.75% of adolescent girls received information on menstrual disorders and nutritional anemia from their family members.

II: Pre assessment of knowledge on management of menstrual disorders and nutritional anemia and biophysiological parameter.

The overall knowledge scores of adolescent girls on management of menstrual disorders reveals that, majority (71.75%) of the adolescent girls had inadequate knowledge where as

28.25% of them had moderately adequate knowledge and none of them had adequate knowledge. where as

the overall knowledge scores on management of nutritional anemia reveals that, majority (80.75%) of them had inadequate knowledge, 19.25% of them had moderately adequate knowledge and none of them had adequate knowledge.

With regard to biophysiological parameter BMI reveals that majority (60.63%, 76.11% and 59.3%) of them were underweight in all age groups (14years, 15 year and 16years) whereas 39.37%, 23.89% and 40.63% of them were with normal BMI and none of them were with overweight.

With regard to HB% majority(86.63%,76.99 and 89.37%) of adolescent girls were having normal Hb% in all age groups(14years, 15 year and 16years) whereas 12.59%, 20.35% and 10% of them were having mild anemia, 0.78%, 2.66% and 0.63% of them were having moderate anemia and none of them were severe anemia.

EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE AND BIOPHYSIOLOGICAL PARAMETER

The overall pretest mean knowledge scores was 24.24 with SD of 2.98 and the post test mean knowledge scores was 38.09 with SD of 2.37. The obtained paired “t” test value was 72.44 which shows statistical significance at $p<0.05\%$.

The mean pre test BMI score of adolescent girls were 17.40 with SD of 2.58, and the mean post test scores was 17.48 with SD of 2.53. The paired t-test value is -1.52. Which was less than the table value (1.96) indicating that there is no significant difference between pre and post test scores. With regard to the mean pre test Hb% was 12.93 with SD of 8.54, post test Hb% was 11.4 with SD of 1.15. The paired t-test value is 3.63.which was greater than

the table value (1.96) indicating that there was a significant difference between pre and post test scores.

Association between knowledge scores with selected socio demographic variables

Association of knowledge scores on **management of menstrual disorders** with selected socio demographic variables revealed that there was a significant association with type of food (χ^2=25.04), occupation of mother (χ^2=21.55) and source of information (χ^2=72.14) except age (χ^2=5.22), type of family (χ^2=0.03), occupation of father (χ^2=4.28), and education of mother (χ^2=0.76).

With regard to association of knowledge scores on **nutritional anemia** with selected socio demographic variables revealed that there was significant association with education of mother (χ^2=21.5), occupation of mother (χ^2=18.47) and source of information (χ^2=6.55) except age (χ^2=3.50), type of family (χ^2=0.95), occupation of father (χ^2=6.48), and type of food (χ^2=0.77).

Association between Biophysiological parameter with selected socio demographic variables

With regard to association of **BMI** with selected socio demographic variables revealed that there was significant association with type of food (χ^2=12.98), source of information (χ^2=9.94) except age (χ^2=7.39), type of family (χ^2=3.57),occupation of mother (χ^2=1.75) occupation of father(χ^2=13.17), and education of mother(χ^2=0.76).

With regard to association of Hb% with socio demographic variables revealed that there was significant association with type of food (χ^2=46.38) except age (χ^2=4.11),type of family(χ^2=0.04), occupation of father(χ^2=0.99),education of mother(χ^2=0.01)occupation of mother (χ^2=3.47) and source of information (χ^2=1.91).

Correlation between BMI & Hb%

Correlation between **BMI and Hb%** of adolescent girls revealed that there was weaker correlation (r= -0.03) between BMI and Hb% and it was not significant(p=0.515).

Discussion:

A vast majority of adolescent girls in India are suffering from reproductive health morbidities which may affect normal life of adolescent and young adult women, hence the study was under taken to assess the effectiveness of planned teaching programm on knowledge and biophysiological parameters of adolescent girls on management of menstrual disorders and nutritional anemia The results showed that majority (80.75%)of adolescent girls had inadequate knowledge and after planned teaching programme there was no improvement in biophysiological parameters such as BMI and Hb%. This was supported by the study on Effectiveness of planned teaching programme on knowledge of menstrual irregularity among adolescent girls. It reveals that majority 52(87%) of the adolescent girls had inadequate knowledge and eight (13%) moderate knowledge regarding menstrual irregularity [66]. This shows in-spite of number of health programmes exiting by government of Karnataka/ India still there is something lagging behind. Hence there is lot of research studies need to be conducted in this area.

Conclusion:

The study concluded that planned teaching programme effective in improving knowledge on management of menstrual disorders and nutritional anemia but not biophysiological parameters. Hence it is suggested there is a need to conduct longitudinal study to know the effectiveness of planned teaching programme on biophysiological parameters.

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Title: *"Effectiveness of Planned Teaching Programme on Knowledge and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia in selected High Schools of Rural Kolar"*

CHAPTER - I

INTRODUCTION

According to WHO adolescence is defined as a period between 10-19 years of age.[1] During this time adolescence will develop a personal sense of individual identity and feeling of self worth, which also includes an alteration of body image, adaptation to more mature intellectual abilities, adjustment to society's demand for behavioral maturity, internalizing personal value system and preparing for adult role.[2]

In girls, adolescence is recognized as a turbulent period which signifies the transition from girlhood to womanhood. A woman goes through several developmental milestones that greatly influence her reproductive health. Puberty, especially the onset of menstruation poses a challenge to an adolescencegirls because it usually occurs before they knows about it[3]. It is exceptionally a special period in girl's life that require special attention.

Attaining menarche is a usualbiological process and the duration of monthly cycle is usually of 28 ± 2-3 days which isidentified by constant and repeateddetaching of progestetional endometrium combined by 50 - 200ml blood loss between implies changing of 3-5 pads/dayrepresentsordinary flow. Due to menstruation related problems adolescent girls, young adult and women normal will affect. . imbalance monthly cycles & otherproblems related to menstruationare often coupled withreproductive problemspsychologicalPhysical, mental,, and social problems[4] Such health harmsrelated to system of procreativeare dysmenorrhoea, PMS, uneven cycles and sexual tract infections[5]. Youngesters are ignorant of the biological, and natural function of their body andIssues associated with menstruation are never discussed openly[6].

Faulty perceptions on menstruation will lead to faulty menstrual practices because their mothers and family members shy away to negotiate the difficulties of childrens. Mothers

themselves are facts of the natural biological process. This make adolescentgirls grow up with limited knowledge. [7]

Adolescent girls are also vulnerable for under nutrition and anemiaApart from menstrual disorders along with menstrual problems. Thecount of RBC are less or Hb% is less such condition is called as anemia. Hemoglobin present in RBC that enables to carry o_2 from lungs to various parts of body. When decreased RBC or less Hb% is seen, blood fail to supply adequate oxygen and tissues starts producing the anemia symptoms.(Gupta and Kochar, 2009)[8].

Dietary iron requirement in women and girls is more than men because of menstruationpregnancy, lactation and other demands on their body's. Inadequate iron in the diet causesanemia.Iron-deficiency anemia is major prevailing nutritional deficiencyaround the world especially among adolescent girls[9]. Because the total nutrient requirements are increased during adolescence period to support a dramatic growth and development. Eating right food at right time will prevent nutritional deficiencies especially iron deficiency disorders[10]. Good diet is needed for proper growth and development of adolescents, for boosting their immunity and preventing conditions like anemia . Vitamin D and calcium in diet and weight bearing exercises build up the bone mass in this age[11].

Seventy-five percent of girls affected bymenstrual problems, because of cultural taboos male dominance and deficient knowledge about menstrual cycle leads to attendance shortage in female college students and they won't seek healthservices, and malnutrition in teenage girls are more prevalent which contributes for occurrence of seminal problems. Many medical conditions may be the cause for uneven monthly cycles. Ninety percent ofmenstrual problems are preventable detected early and properly treated by appropriate methods at peripheral level itself. Negligence of Women's health is seen because, mothers themselves are not aware about facts in terms of menstruation and anemia[12].

At most demographic and fiscal force formed by youth, and these youths are coming up citizens of nation. Pre-adult period youths are prepared for undertaking better tasks like social cultural family and financial issues in adulthood.[12] well in advance if we teach the teenager about menstrualhygiene monthly cycle and deficiency disorder ,they can take-care of their later life.If the community nurse able to address these problems effectively in rural families and guide them in right way to manage their general health and become healthy feature mother.[13]

Need for the study

The world is home to 1.2 billion individuals aged 10–19 years[14] and the two countries maintains primeresidents of young people243 million in India and china 207 million and the other leading countries with highestinhabitants of youthUnited-States (44 million),Indonesia, and Pakistan (41 million each)[15]

Adolescent period is a critical link between childhood and adulthood, characterized by significant socialpsychological andphysical changes.The reproductive problems are often interconnected with menstrual problems and unbalanced menstrual cycles[16].

Post menarche period i.e. two –three years, menstruation related problems are expected. In Indian context young females face menstrual problems and other problems due to monthly cycle like pain in abdomen PMS more bleeding intermenstrual bleeding,discharge per vagina, UTI, anemia etc[18]

In developing countries Health problems related to menstruationusually professed as simply slight health unease and thus its unrelated to the community health schedule, due to which women faces life threatened conditions[19].

Teenager are particularly vulnerable to nutritional problems and anemia because they eat less than RDA & will have inadequate intakes of nutrients especially iron. Iron deficiency anemia ismost expected amongadolescent girls because of increased demand of iron for hemoglobin, myoglobin, poor dietary habits and loss of **blood due to monthly periods.** [20].

A retrospective researchis conducted on occurrence of manses difficulties among college going female students at "Madrascity" revealed that 42% of adolescent girls had menstrual problems"such as pre-menstrual syndrome, dysmenorrhoea, amenorrhoea, menstrual cycle length disorders, oligomenorrhoea and polymenorrhoea.[21]

A descriptive study on anemiain adolescent-girls conducted at Hasan district, Karnataka revealed that, mild anemia observed in 40%adolescent girls, moderate anemia in

55%females&five percentof minor girls identified with severe anemia . the research accomplished that nutritional status of adolescent girls is affected by anemia[22].

Correlational study conducted to assess relationship between irregularities of menstration to BMI & nutritional condition of adolescentgirls in Hyderabad. Results scruffy that, seventy-76% sampleshad typical cycle, 7% had it frequent, 13% had infrequent menstruation and 4% it was totally irregular, 60% of adolescentgirls were found clinically anemic. Normal BMI was 69%. Under weight with a BMI of 14–18.49kg/m^2 assessed in 27%. while 4% were overweight with BMI 25 – 30 kg/m^2.[23]

Spermatic-health with teenagerwas assessed by a Descriptive study at Udupi taluk, Karnataka results showed a significant increase in overall knowledge scores (from 14.4 to 68%, P< 0.01)along with adolescent_girls. intervention concluded "the educational intervention" program can bring about a popularamend inadolescentgirls knowledgescore[24].

Followed by literature review assumed "there were studies on knowledge" of menstrual disorders and anemia in relation with"biophysiological parameters" there were only limited studies. Hence researcher felt that the need to accomplishexperiment by effectiveness of PTPon Knowledge and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia .

CHAPTER -II

OBJECTIVES

STATEMENT OF THE PROBLEM

A study to assess the "***Effectiveness of Planned Teaching Programme on Knowledge and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia in Selected High Schools of Rural Kolar***."

Objectives of the study:

Primary objectives:

1. To assess the knowledge of adolescent girls on management of menstrual disorders & nutritional anemia using structured knowledge questionnaire
2. To evaluate the effectiveness of planned teaching programme on level of knowledge among adolescent girls on management of menstrual disorders & nutritional anemia by comparing pre & post test knowledge scores.
3. To determine the association between level of knowledge among adolescent girls on management of menstrual disorders & nutritional anemia with selected socio demographic variable after implementation of planned teaching programme.

Secondary objectives:

1. To assess the biophysiological parameter of adolescent girls using observational scale
2. To evaluate the effectiveness of planned teaching programme on biophysiological parameter of adolescent girls by comparing pre & post test observational values.

3. To determine the association between biophysiological parameter of adolescent girls with selected socio demographic variable after implementation of planned teaching programme
4. To correlate between knowledge scores & biophysiological parameters after implementation of planned teaching programme.

OPERATIONAL DEFINITIONS

Effectiveness: It refers to the extent to which the planned teaching programme has achieved the preferred results which is measured by improvement in knowledge & biophysiological parameters of adolescent girls.

Planned teaching programme: It refers to a organized way of giving information to adolescent girls in regard to management of menstrual disorder for example oligomenorrhoea, amenorrhoea, polymenorrhoea, dysmenorrhoea and nutritional anemia.

Knowledge:-It refers to correct answer to the structured questionnaire by teenage girls.

Biophysiological parameter: It refers to height, weight and Hb% and it is measured using standard weighing machine, measuring tape and Hemoglobin estimation (Taliquest method).

Management of Menstrual disorder and nutritional anemia: It refers to creating awareness among adolescent girls regarding managing themselves during menstrual problems and nutritional anemia.

Menstrual disorder:-It includes oligomenorrhea Polymenorrhea amenorrhea dysmenorrhoea. Oligomenorrhea means infrequent periods/ less menstrual blood flow. Polymenorrhea means excessive menstrual flow, amenorrhea means absence of menstrual cycle for continuous 2-3 months and dysmenorrhoea means painful menstruation.

Nutritional Anemia: It refers to decreased Hb% among adolescent girls due to less/ inadequate intake of balanced diet/iron rich diet

Adolescent girls: It refers to girls aged between 13-16years studying in government high school at rural Kolar Taluk.

NULL HYPOTHESES:

- **H_{01}**: No significant difference between pre and post test knowledge score on management of menstrual disorders & nutritional anemia among adolescent girls**.**
- **H_{02}**: No significant association between knowledge scores on management of menstrual disorders & nutritional anemia with selected socio demographic variables.
- **H_{03}**: No significant association between Biophysiological parameters with selected socio demographic variables.
- **H_{04}**: No significant correlation between knowledge scores & Biophysiological parameter after implementation of planned teaching programme.

THEORETICAL FRAME WORK

Theoretical frame work for present study (Fig.1) is based on general system theory abstracted by Ludwig Von Bertalanffy (1968) as cited by Fawcet (1995). This theory takes into account the inter-relationships between parts, and the whole, which have vast implications for nursing.

General system theory systems consist of set of interacting components within a boundary that filters the type and rate of exchange with the environment. Systems are composed of both structural and functional element. Structure means arrangements of parts at a given time-period and task is the processes of continuous vary in the system as matter, energy and information are exchanged with the environment.

All living systems are open systems which promote the exchange of matter, energy and information with other systems (subsystem) and environment (supra system). The exchange within open system, between open system and their suprasystem is continuous. The dynamic balance within and between the system, the subsystem and suprasystem helps to create and maintain internal stability. The change in a part of system create change in other parts. In every system, action can be recorded into an aggregate of feedback circuits as input, throughput and output.

This theory has 4 components as input, throughput, output and feedback.

1. Input

As per Ludwig Von Bertalanffy (1968) the input is any form of energy, information or material that enters into the system through its limits In current study adolescent females considered as a structure having input within the structure itself (subsystem) and acquired as of in environment (suprasystem). The input includes adolescent girl's background information as age, religion, parent's education, and parent's occupation, kind of food and source of information. Which can influence the knowledge on, management of menstrual disorders and nutritional anemia, further increasing biophysiological parameters?

In the present study input refers to administration of planned teaching programme on management of menstrual disorders & nutritional anemia.

2. Throughput

It be a process that occurs between the input and output. It enables the input to be transformed to production in such a way that it can be readily used by the system. In this study, throughput refers to process of transformation of knowledge on management of menstrual disorders and nutritional anemia and improvement of biophysiological parameters such has height, weight, BMI and Hb%.

3. Out put

It is an energy, information and material that are transferred to enviournment. In this study it refers to gain in knowledge score on management of menstrual disorders & nutritional anemia and improvement in biophysiological parameters such has height, weight, BMI and Hb% after Planned teaching programme.

4. Feed back:

It refers to the output that is returned to the system, which allows it to monitor itself over time as an attempt to move closer to a steady state known as equilibrium or homeostasis. It may be positive, negative or neutral. In the present study, the feedback refers to the effectiveness of Planned teaching programme and it can be tested through null hypotheses as follows;

- compare the difference between pre and post test knowledge score on management of menstrual disorders & nutritional anemia .
- compare the difference between pre and post test values of biophysiological parameters.
- Determining the association between knowledge score with selected socio-demographic variables.
- Finding the co-relation among knowledge scores with biophysiological values of adolescent girls.

Summary

This chapter dealt about preface, necessity for the study, research problem, hypotheses, operationaldefinitions and theoretical frame work. The literature reviewed follows in the next chapter.

CHAPTER - III

REVIEW OFLITERATURE

Review of literature is a systematic identification, location, scrutiny, and summary of written materials that contains information on research problems.

The reviewliterature has accessible under the following categories:

1. Studies on prevalence on menstrual disorders and nutritional anemia .
2. Studies on management of menstrual disorders and nutritional anemia .
3. Studies on PTPon management of menstrual disordersand nutritional anemia .
4. Studies on biophysiological parameters.

Studies was conducted on prevalence of "menstrual disorders" and nutritional Anemia

A cross-sectional survey was conducted to assess the "awareness on menstrual abnormalities and health seeking behavior" in Nigeria among college students. With stratified sampling method 400 Samples were elected. outturn elicited that, in 62.5% students reported pain in abdomen , 29% of students not awareness about menstrual abnormality, and 10.5% of them decided to take medical help for menstrual problems". The study accomplished that; study subjects were having insufficient knowledge on menstrual issues. Investigator pressurizestoeducate college students to recover their health seeking behaviour[25].

A quasi experimental research conducted to know the efficiency of STP on knowledge, beliefs and practices regarding menstrual abnormalities and seminal conduct within youth at selected wards of Christian Medical College, Vellore. Sixty-two girls were selected and haphazardly allocated to experimental (31) and control (31) group, followed by a Pre-test was conducted. Then a STP on menstruation abnormalities and sexual behaviour was conducted for the experimental group, but not the control group. after seven days post-test was conducted for both groups . Findings revealed that 71.4% samples having regular

menstrual cycle, 14 (28.6%) did not have it regularly; 34.6% sampleshaving abdomen pain during menstruation. In pre-test, 81% of samples instudy group and 87% in the control-group had inadequate knowledge, 90% from experimental group and (30%) in the control-group had unfortunate belief, & no significant change in the control-group before and after intervention. This concluded that interventionwas found effective in enhancing the knowledge and promoting positive beliefs with teenage girls[25].

A descriptive study on knowledge, attitude & practices conducted regarding menstruation &its problems among adolescent girls, at urban field practice area of, L.L.R.M. Medical College, Meerut. For the study "systematic random sampling technique" 384 teenager are included. Results showed that, (38.5%)samples know about menstruation prior to menarche, where as 66.9% erudite from her mother. 14.6% of samplesknow about at least one menstrual disorder. Abdomen-pain is frequently occurring problem (58.4%), followed by oligomenorrhoea (16.2%), menorrhagia (13.9%), premenstrual tension (13.6%), infrequent menstruation (12.3%) and polymenorrhoea (12.2%). Out of 226(72.7%) girls having "menstrual problems, 77.9% did not seek any treatment for their problems and55.2% were using sanitary pads during menses. At lastresearch disclosed"adolescent girls were not well prepared" and do not possess adequate information regarding menstruation even though it is an important event in life[26].

A survey was conducted on prevalence of dysmenorrhoea & menstrual experiences among Lebanese adolescent girls, at Sidon city and suburbs, Lebanon. For the study 389 post-menarche schoolgirls.were selected by "Cluster Sampling Method". It showed that girls attained menarche at age of ±11–13 years. 35.2% of samplehadunequal menstrual periods &heavy amount of blood flow was seen in 27%. 74.3% of the adolescent girlsreporteddysmenorrhoea and premenstrual symptoms including painabdomen (37.0%), headaches (22.8%), breast swelling (34.6%), back pain (19.4%), leg pain (15.6%), breast pain

(6.6%), general body aches (22.8%), mood changes (80.7%) and/or irritability (72.0%). Of these, only (7.3%) of them consulted a physician about painabdomen. Results; the better germinal educational programmes focusing on menstruation are needed for adolescent girls[27].

Non interventional study done on "Menstruation related problems & the consequence of these problems on daily activities of adolescent girls at two slums of NewDelhi. 198 adolescent (school going) girls were included. Results shows that >35.9% belongs to 13-15 years age group, dysmenorrhoea (67.2%) was the commonest problem. Daily activity of 60% girls got affected by prolonged bed rest, missed social activities, disturbed sleep & decreased hunger, (17.24%) of them were missed the classes &25% girls abstained from work.[28]

A advisory research regarding "menstrual patterns and commonn menstrual disorders" among Dinajpur medical collegegraduates was conducted atBangladesh. 174medicine studensareaddedwith " Purposive sampling method". The consequences of the research show 152 (87.4%) respondents had regular menstrual cycle,22 (12.7%) had irregular cycle. And100 (57.5%) studentsMenstrual flowwas average, scanty flow was seen among 72 (41.4%) and heavy flow was seen among 2 (1.2%) partcipants. All-most 106(60.9%) conceded that they had painful menstruation (dysmenorrhoea) with a varying degree of severity. Out of 106 (60.9%), 26 (24.5%) of them used medical intervention either by analgesic and/or antispasmodic. About 56 respondents had family history of pain abdomen. Therefore the prevalence of "dysmenorrhea and menstrual irregularity" were mostly common in adolescent girls because of less in turn about problems. Hence researcher recommended that an educational programme regarding "menarche & menstrual disorders" is fundamental before pre-menarche age, which guides theyoung-girls to manage their menstrual problems[29].

A survey on incident of menstrual disorders among teenagers of rural district ,Satara district, western Maharashtra, India using purposive sampling adolescent girls [107] are included,among them 79 girls (73.8%) had normal monthly cycles whereas 26.1% of samples

reported about irregular menstruation cycles and 40(37.3%) of them had normal (average) menstrual bleeding. Whereas scanty and heavy bleeding was seen among 61(57%) and 6(5.6%) girls respectively. Dysmenorrhoea was observed in 24(22.4%) girls, anemia was seen in 62(57.9%) girls, under nutrition was in 52(48.5%) girls, Obesity was in 7(6.5%) while 42(39.2%) girls frombelow poverty. Investigator assumed that "nutritional status, low socio economic status & low Hb" is often associated with "menstruation &menstrual problems[30].

An explorative study conducted on "prevalence" and type of menstrual problems among preteen girls at Government high school of Bhavnagar city, Gujarat district. 745 adolescent girls were selected using randomization. Results revealed the average age at the time of menarche was ±14 years. 88.1%girls had probable sequence in relation to menstruation before the event. "30/3-5days" was Normal menstrual pattern. The universal "menstrual problem"was dysmenorrhoea (50.6%), irregular menstruation (22.9%) and maximum girls' uses old cloth as absorbent. The researcher concluded that education programme required regarding normal physiology of menstruation, menstrual hygiene & abnormal menstrual cycles at school level it-self.[31].

Cross sectional research on awareness of health seeking behaviouron menstrual abnormalities among college students (female) conducted at Nigeria. Students (400) are elected by stratified sampling type. The output of the investigation is 90% samples are having uneven monthly periods, 62.5% verbalized about pain abdomen and 12.5% students absent for classes. Very little percentage i.e. 10.5% are consult physician for menstrual difficulties. The researcher emphasized the need of education of students in terms of menstrual problems,so that adolescent can progress in health seeking behavior.[32].

A retrospective trial on dominance of menstrual problems& correlation between "regular menstrual issues" with "nutritional status of teen age girls" was conducted in urban slum area of Western Maharashtra, India. Simple-random-sampling was used to include 237

adolescent girls. Domino effect exposed that Out of 237 adolescent girls, 230 girls reached stage of menarche 147 had normal cycles and for 83 it was irregular. The mean age of menarche by remember method was 12.8 yrs. popularity of under-nutrition and anemia was 40.86% and 60.43% in that order. Only 25.75% students expressed about health seeking behaviour for common menstrual problem. Study shows that Poor dietary pattern & anemia were linked with common menstrual problemswith adolescent girls from urban underprivileged areas[33].

Pain-in-abdomen was assessed using Comparative study at Karimnagar,Andhrapradesh. Sample method used is"purposive" , from urban 101 & rural 79 adolescent girls were selected.The conclusion exposed that event of dysmenorrhea was 53% in urban areas where as in rural area it was 56% and with sickness absenteeism (28–48%), socio economic, and superficial quality of life losses were more prevalent in town/city girls than in rural girls. Girls in villageareas resort to physical labor and additional natural methods to obtain liberation from dysmenorrhea where as girls in urban areas are mainly depending on medications[34].

A "cross-sectional"study was conducted on menstruation& its problem among adolescent girls, at Delhi. Adolescent girls [198] were selected by "purposive sampling". As per findings largest part78.8%females had at least 1 problem related-to menstrual cycle. Dysmenorrhea 67.2% was most common faced by the adolescent girls, 63.1% of them had premenstrual syndrome, backache 56.6%, fatigue 48%, breast heaviness & joint pain 24.2%,weight gain(17.2%) during & few days before menstruation. as a final point of study accomplished that "Screen adolescent girls for menstruation related problems & provide them counseling services & health educational programme"[35].

A trans-sectional research done on Knowledge on prevalence and supervision of disorder of menses amongst adolescentgirls at Delhi. Total 2000 adolescent girl are added in

the research with simple random sampling procedure.1000 in both the groups. The results prove that, age of first periods in both groups were 13.2 years. Prevalence of Menorrhagia, Dysmenorrhea and oligomenorrhoea was (14.8%), (57.4%) and (27.2%) respectively in the municipal group and 12%, 72.6% and 39% respectively in the rural group. Accomplishment of research was nearly all adolescentgirls had unfortunate and insufficient information regarding menstrual problems. Hence study emphasised that education program and counselling services are essential to the adolescents at health clinics and schools[36].

A retrospective"study was done on "prevalence, pattern of menstrual disorders, management practices & the effect ondisorder of menstruation" on school attendance among young girls of selected secondary schools in, Nigeria country. Five hundred females ofage group between 10 - 19 years post menarcheal adolescent girls were included. Information was gathered by using semi structured questionnaire. The outcome concealed that, predominance of menstruation disorder was 69.4% in that,pain-in-abdomen, PMS and short cycles were the common problems. Main reason For school absentees isDysmenorrhea.Studyrevealed highprevalence of "difficulties of menstruation"and"elevated rate of non-expert treatment" of the disorders. Which draw attention to the require for attentiveness creation at school level.[37]

Study on "***Problems Related To Menstruation"*** along with adolescentgirls carried out at Maulana Azad MedicalCollege at **Delhi**. Females aged between 13-17years old 178 samples were incorporated by random sampling type. The result revealed that dysmenorrhea (67.2%) was the commonest problem and 63.1% had symptoms of PMS. In daily routine 60% of girls were affect due to prolonged bed rest whereas 25% are absent for their job. This proved there there is a call for to design reproductive health programmes for young girls.[38]

Across sectional study" was conducted on "prevalence of dysmenorrheaand its management strategies, among senior school girls in Perth, Western Australia. by using cluster sampling technique 388 girls were selected. The results uncovered that regularity of

dysmenorrhea among these girls was 80%,(53%) of those girls with dysmenorrhea limited their activities. In particular, 37% said that their school activities affected by the same. The nearly everyone used medication for dysmenorrhea was simple analgesics (53%), followed by nonsteroidal anti-inflammatory drugs (NSAIDs) used by 42%. More than (27%) were unaware that NSAIDs were a possible treatment option for dysmenorrhea. The study accomplished that the incidence and impact of pain in abdomenin senior school girls was high andinsufficient awernesson effective treatment. The study emphasised that Health education events are vital among pubescent girls in order to prevent unnecessary suffering and interruption academics .[39]

Study was conducted in view of assessing "prevalence of abnormalities of menstruation" and the utilization of "medical treatment for these abnormalities" at Singapore among. By simple random sampling method 5561 young girls were selected. The end result revealed that, 23.1% had irregular flow. Frequent periods was the most (15.3%) repeated problem and Polymenorrhea was less(2.0%) prevalent & 83.2% of samples reported about dysmenorrhea out off 83.2%/ 24% girls to became school absenteeism. Hencemenstrual problemsinadolescent females are common and a significant source of morbidity. Proper health teaching modules need to be formulated in view of preventing such problems.[40]

A "cross sectional study" done to review the intensity of knowledge on treatment of dysmenorrhea with teenage girls at Haryana, India. Four hundred adolescent girls were elected by random sampling method.. The result shows that with regard to consultation of physicianfor menstrual symptoms only 5.3% of adolescent girls consulted. and 22% of adolescent girls self treated with over-the-counter medicines, 52% of adolescent girls reported self treatment and 7.7% of adolescent girls used corresponding medication. Ending of the research prove that poor access of available effective treatments & even about house-hold and herbal remedies of menstrual disorders. Hence study emphasised that awareness

programme are essential regarding services & options of treatment available for menstrual disorders to the adolescent girls.[41]

A cross-sectional study was carried out at Nigeria to assess "knowledge regarding primary dysmenorrhea and natural remedies used in management of dysmenorrhea" among adolescent girls. Fiftyadolescent school girls were selected by convenient sampling technique. Data was collected through pre-tested questionnaire. Findings reveled the 42% of adolescentgirls had a knowledge deficit regarding dysmenorrhea and natural remedies.58% of samples reported pain and majority used inappropriate methods to manage primary Dysmenorrhea. School nurses are able to assist adolescentgirls in proper management of primary dysmenorrhea.[42]

A "cross sectional study" was conducted "To assess the knowledge and attitude towards problemsrelatedreproductive health in adolescent girls"at Punjab, India. Purposive Sampling process was opted to select 150 teenager. Results showed (48.4%) had irregular cycle, 10.4% had oligomenorrhea, 15.6% had menorrhagia, 3.6% had Polymenorrhea, and 84% had dysmenorrhea and 10% pathological vaginal discharge. The study finalized that adolescent girls need extensive and supportive education programs to improve young girls understanding of reproductive health status.[43]

A "descriptive survey" was conducted on***knowledge***and***effective treatment***forcramping pain among teenager in **Chicago city**. By Convenient Sampling method"182"teenagers at the age 14-18 years were added. The conclusion concealed that 72.7% reported pain & discomfort, 58.9% reported decreased activity, and 45.6% reported school or work absenteeism, prescribed medication used by 15.5% and only 14.7% used natural remedies at home. Study evidented that there was "substantial ignorance or misinformation withinteenager regarding effective natural home management for dysmenorrhea.[44]

A study conducted on “knowledge regarding menstruation and menstrual hygiene” among school going adolescent girls conducted at Ambala district, Haryana, India. Using multi stage randomization 400 adolescent girls were opted for study who were studying in IX to XIIstandard. Study revealed the utmost 51.2% having negative reaction to menarche, most (77.6%) of them reported dysmenorrhea, 55.7% of sample had not heard about menstruation at the time of first period while 65.3% were afraid after menarche. Disclosed facts about knowledge regarding menstruation, and menstrual hygiene was poor. hence researcher recommended that Education regarding reproductive health and menstruation with more focus on menstrual hygiene should be a part of school curriculum[45]

A “cross sectional study” onmenstrual problems along with feminine college student conducted at rural region of sangli district Maharashtra state.Stratified random sampling method used to elect 121 samples.Study outcome disclosed that majority(64%) participantsare having menstrual problems, the almost all (42,5%) verbalised about dysmenorrhea, followed by this excessive bleeding 19.9%, irregular bleeding (14.5%) and PMS (premenstrual-syndrome) 17.2%students and depression 34.4% was identified respectively. And 43 (36.13 %) those who are suffering from menstrual problemshad consulted doctor. Finalized accomplishment of the study is “dysmenorrhea was commonest menstrual problem; the consulting physician for problemrelated menstruation is very low”. This things to see the necessity for proper professional counseling[46]

A school based enlightening interventional research done on knowledge on menstrual healthpractices& belief and with adolescent-girls at Araihazar area Bangladesh. Four-hundred and sixteen students selected. Using random sampling technique from 03 schools. domino effect show that in pre-test knowledge scores on monthly cycle (77.4%), menstrual hygiene (68.7%)and in the aspect of (67.1%)menstrual pain avoidance. While in posttest knowledge scores on menstrual periods (93.5%), menstrual hygiene (95.7%) & menstrual pain

prevention (94%) indicates"significant increase" in level of acquaintance following educational programme. Overallknowledge scores of pretest regarding knowledge belief and menstrual-hygiene perform was 51% whereasknowledge score in post test on same aspects were 82.4% which shows significant improvement in intensity of knowledge on menstrual heath &intervention was effective.[47]

Descriptive surveyon"knowledge and treatment persuing behavior on menstrual and conceptive health" among adolescent girls conducted at selected areas of Haryana. A sample of 130 adolescent girls preferredby convenient sampling technique. The results shows that 40.7% had dysmenorrhoea, 2.3% had unevenperiods, 5.3% went to doctor & 22.4% took their ownmedications from the chemist store. Main resources of information were television (73.1%), parents (36.1%) and radio (37.1%). Researcher suggested that educating school girls about adolescence pregnancy and sexual health problems through schools and parents by the health professional at school level.[48]

Management of menstrual disorders &nutritional anemia.

A prevalence study executed on menstrual problemsand pattern of consultation"was conductedwith adolescent school girls Pondicherry city. Through interview technique 371 adolescent girls who attainted menarche are added. findings revealed that 52.02% had cramping pain and 40.43% reported of passing of clots during menstruation, 26.84% had sought consultation, among them majority (58.09%) consulted doctors and 4.12% girls consulted health workers, while 34.25% of them discussed problems with mothers of adolescent girls . Finally study disclosed emergency of strong health educational activities for adolescent girls including parents including teachers for efficient managing the problems due to menstruation among all adolescent girls.[49]

A "comparative study" was done on"Effect of ginger and ibuprofen on menstrual pain"between young girls in Iran on September 2006 to February2007. With Purposive

sampling method 150 PUC studensinvolved in research. Ginger group samples took 250mg of ginger powder four times a day for three days from start of their menstrual period. Members of other group received 400mg ibuprofen capsules, on the same protocol. Research prove "Ginger was effective than Ibuprofen" for relieving pain in teenager girls with primary dysmenorrhea, with no side effect.[50]

A proportional research on nutritional profile and prevalence of anemia conducted among adolescent rural girls and boys of Government High School at Patiala, Punjab. Using purposive sampling technique, 50 girls and fifty males were considered in theexperiment. The results displayed that the Hb of the girls was range of 6-12 g / dl, and in male Hb% rangeof 7.5 -14 g / dl. And maximum female subjects (98%) and male subjects (56%) were anemic with Hb%< 12 g/dl. The nutritional parameters exposed that the average height of female and male subjects ranged from 150-170 cm and 162.5-189.0 cm respectively. Menstruation & menstrual irregularities showed that 50% of subjects had normal cycle where as the other 50% were suffering from various menstrual disturbances. Among the latter 50% was suffering from dysmenorrhea. An equal number (18% each) were suffered from menorrhagia and oligomenorrhea, 12% were suffered from amenorrhea with the gap of 1½ – 2 months between two menstrual cycles. Comparison between hemoglobin levels and menstrual disturbances revealed that female with normal menstruation had higher hemoglobin levels (9.0 g/dl) than the females with menstrual disturbances (8.83 g/dl). Among girls consumption of tea was high and diets were inadequate in fruits, vegetables and milk products reflecting deficiencies in energy, protein, fat, iron and B vitamins. Overall female subjects showed poorer nutritional profile and higher prevalence of anemia as compared to male subjects[51]

A "cross sectional study" was conducted on adolescent girls to get the prevalence of anemia at *Nagpur*. With simple random sampling technique 272 adolescent-girls are integrated. The result show that Prevalence of anemia high (90.1%) in teenage girls. Mild or moderate

anemia reported in88.6% girls. A large association was identified between adolescent girl's education, mother's occupation and anemia . The study completed that Nutritional education along with nutritionalsupplementation of iron folic acid tablets should be provide to everyteenager in order to preventanemia [52]

Retrospective survey conducted on Prevalence rate of anemia and undernourishment inschool age girls in countryside Delhi and Rajasthan. (134) adolescent-girls were selected randomly. A pre- designed questionnaire used for obtain the details of the socio-demographic variables. A relevant clinical assessment was done. The lesson revealed that 93.2% of early adolescent girls were anemic.[53]

Prevalence study conducted on dominance rate of anemia in adolescent-girls at Vantamori primary health center area, Belgam.Adolescent girls [840] were added by simple random sampling. The samples of blood gathered and tested by using an automated cell counter. Findings of the study displayed that overall prevalence of anemia was 41 % and considerably high (81.2%) among the young girlsbelonging to low socio-economic status. The study concludedsaying nutritional advice is required among the lower middle-class group adolescent girls[54]

A "cross sectional study" was conducted on crash of IEC on nutritional condition of adolescent girls at urban slums of Secunderabad and Hyderabad. With quota sampling technique 2500 adolescent are samples of study. The outcome reveal about BMIweight/height i.e. 7.2 % of them were severely malnourished 27.9 % were moderately malnourished, 43% were mildly half-starved, 21.9% of them were normal, and 88% samples were anemic. Whereas in the area "Knowledge on physiological changes during adolescent period" improved significantly (77.6%), in post-intervention period. So overall knowledge on physiological changes in adolescent period was unfortunate and incidence of malnutrition in high among adolescent girls.[55]

Non interventional research was carried out to assess knowledge on anemia and its prevention because of iron deficiency"incollege girls of selected colleges at Mangalore. 100 adolescent girls were chosen through non probability purposive sampling technique and knowledge questionnaire was opted to gathered data related to iron deficiency anemia. Findings show 84% of adolescent-girls having "moderately-adequate" knowledge, eleven percent had "inadequate knowledge" and only 5% had "adequate knowledge" on prevention of anemia [iron deficiency] . which reveals"no significant association" found between knowledge scores and with nominated population based information on adolescent girls (p>0.05t). The research finished with suggestion of educational programme can be provided for adolescent girls related-to iron deficiency anemia at school level[56]

Studies on of educational interventions

An "quasi-experimental study" on Effectiveness of PTP on knowledge of menstrual irregularity conducted among adolescent dirls at Aurangangabad school.Amongh them [60] were selected by random sampling. Study reveals maximum 87% of adolescent-girls having"inadequate knowledge" regarding menstrual irregularity. Mean percentage of pretest was 23.42% whereas the posttest mean percentage of was 80.62% with enhancement of 57.2%. The values show that study subjects gained excellent knowledge regarding uneven menstruationinteenagers.[57]

A explorative study conductedon effectiveness of STP on awareness regarding prevention of anemia among adolescent girls conducted in selected senior secondary schools of Bharatpur. (60) adolescent-girls are selected by simple random sample technique. Results reveals that the overall post-test (24.78%)> pretest(10.07%) knowledge rank. The averagechanges between pretest and posttest scores was 14.71 which significant at <0.05. conclusion is teaching STP was effective in ameliorating the awareness R/T prevention of anemia .[58]

An quasi_ experimental study on effectiveness of PTP on anemia (iron deficiency) among teen age girls was conducted @ Ahilyabai Holkar School,Loni Maharashra. By using simple random sample technique thirty adolescent girls were selected. Results shows that in pre_test adolescent [60%] girls having"average knowledge" on anemia (iron deficiency), and post_test seventy percent of adolescent girls having better knowledge on iron deficiency disorder. In relation to meanknowledge-score of pre-test was 7.03, and meanknowledge-score of post-test was 16.38. which prove STP was effective.[59]

An interventional study on Effectiveness of PTP on prevention and control of anemia among adolescent school childrens at Rajasthan. Through multistage sample method 60 adolescent school childrens were selected. Results showed meanknowledge score of post-test was 27.25%> 18.66 pretest score. The study fulfilled that planned education activity was useful in humanizing the acquaintance regarding prevention & control of anemia .[60]

Studies on Biophysiological parameters.

A "cross sectional study" on Correlation of hemoglobin versus BMI and body fat among female medical students. By using convenient sampling method 232 students were selected. Results revealed that, 34.6% suffering from anemia . Correlation between Hb and BMI was (r = −0.49) showed negative correlation, found statistically significant(P < 0.001).Body fat tested by Pearson correlation with Hb showed higher negative correlation coefficient (r = −0.49 for BMI versus −0.56 for fat percentage). This suggests that " a better parameter to get a rough idea about Hb status of adult female is body fat".[61]

An correlational study on "correlation between BMI and Menstrual Irregularities among girls in higher secondary school at Dhulikhel municipality Nepal. Using "Random sampling process" 253 adolescent girls were elected by different higher secondary schools. out of the 253 adolescent girls, 155(61.3%) are having " normal weight", 58(22.9%) were

found under weight and 40 (15.8%) are overweight. Menarche age is 13.14 ± with SD 1.173. more (78.6%) girls reporteddysmenorrhea, followed by uneven menstrual cycle (38.7%). Which show the "relationship" in-betweenmenstrual irregularities and BMI (p=0.024), oligomenorrhea (p=0.027), polymenorrhea (p=0.006) and hypomenorrhea (p=0.01). The study presented that there is "no correlation"among BMI and metrorrhagia (p=0.147), secondary amenorrhea (p=0.369), dysmenorrhea (p=0.362) and menorrhagia (p=0.422). Study concludes that BMI plays important role for regulating menstrual cycle. So, adolescents have to take equilibrium food to maintain normal BMI & regulate their menstrual cycle. [62]

"Cross sectional study" was done on "Relationship of irregularities of menstruation to BMI and nutritional status among adolescentgirls, at Hyderabad. By using random sampling method 401 adolescent-girls from different schools at Hyderabad are selected. Results showed that, 76% had normal menstrual cycle, for 7 % it was frequent , 13% had occasional cycles and only 4% had it irregular and pattern was not able to determine . 60% of samples were anemic. 69% of them had normal BMI, 27% had low weight with a BMI of 14 – 18.49kg/m^2, while 4% had overweight with BMI 25 – 29.99 kg/m^2. There was correlation between BMI and menstrual pattern with (df = 6, x3= 116.5, P <0.001).[63]

"Correlational" article on interrelation of Hb% with BMI among undergraduate medical students of Kathmandu Medical College, Duwakot, Bhaktapur. Two hundred females are added by "cluster sampling method". Outcome concealed that out of 200 students, 55.5 %(111) were boys and 44.5 % (89) were girls. Majority 72.41% anemic with hemoglobin value 11.75gm/dl. Correlation of " Hb% & BMI" show a "-ve" association of BMI to Hb% in underweight females and women with normal BMI.[64]

"Comparative study" on hemoglobin level & BMI among preparatory year females students conducted at Taibah university kingdom of Saudi Arabia. By using "Simple random

sampling method" **211** students were selected. Results revealed that, 46.2% were less-weight, whereas 33.0% are weak & the BMI mean was 21.3+/-1.66 and mean HB% was 10.9%+/-1.39. 58.8% reported regular menses with insignificant difference between anemic samples and those with normal hemoglobin. Finally the study show significant association (p=0.002)was found between the anemia and type of food. And concluded that anemia was more(33.0%) prevalent among normal(45.7%) and underweight(40%) students with no significant association amonghemoglobin level & BMI status. [65]

CHAPTER - IV

METHODOLOGY

Chapter-3 gives description about methodology adopted by the investigator and it includes research approach, research design, study setting, sampling type, tool construction, explanation of questionnaire , pilot Blue print of the study, data collection method and analysis of data.

Approach for Research

It's an process to perform a research to complete the Study-objectives and approach used is "evaluative-approach".

Design of Research:

"One group pretest & Post-test quasi-experimental design" was used. First knowledge (dependent variable) on management of menstrual disorders & nutritional anemia including their along with biophysiological parameters were also assessed, after assessment of knowledge Structure-teaching intervention (independent variable) on managing of menstrual disorder & nutritional anemia was administered for adolescent girls. After a month of exposure to structure teaching programme, again biophysiological parameters and knowledge were assessed using same tools.

Study population:-Population comprise of adolescent-girls who were study in GHS of rural Kolar Taluk.

Sample:-Present study, adolescent girls aged between 13yrs -16yrs are considered as sample and studying in GHS of Rural Kolar taluk.

Sample size:

Sample size was done by power analysis as follows **Cochran's Formula[61] ; $n=z^2 pq/d^2$ = 384**

Z=1.96 confidence level 95%

μE^2 =1.96

P= 0.5 (50%)

Q=1-p=1-0.5

d= degree of precision =0.05

n= sample size

n= $(1.96)^2(0.5)(0.5)/(0.5)^2$

n= 384.2

Four-hundred adolescent girls are integrated for study.

sample method :-Simple random sampling technique, a lottery manner was adopted. to select the sample

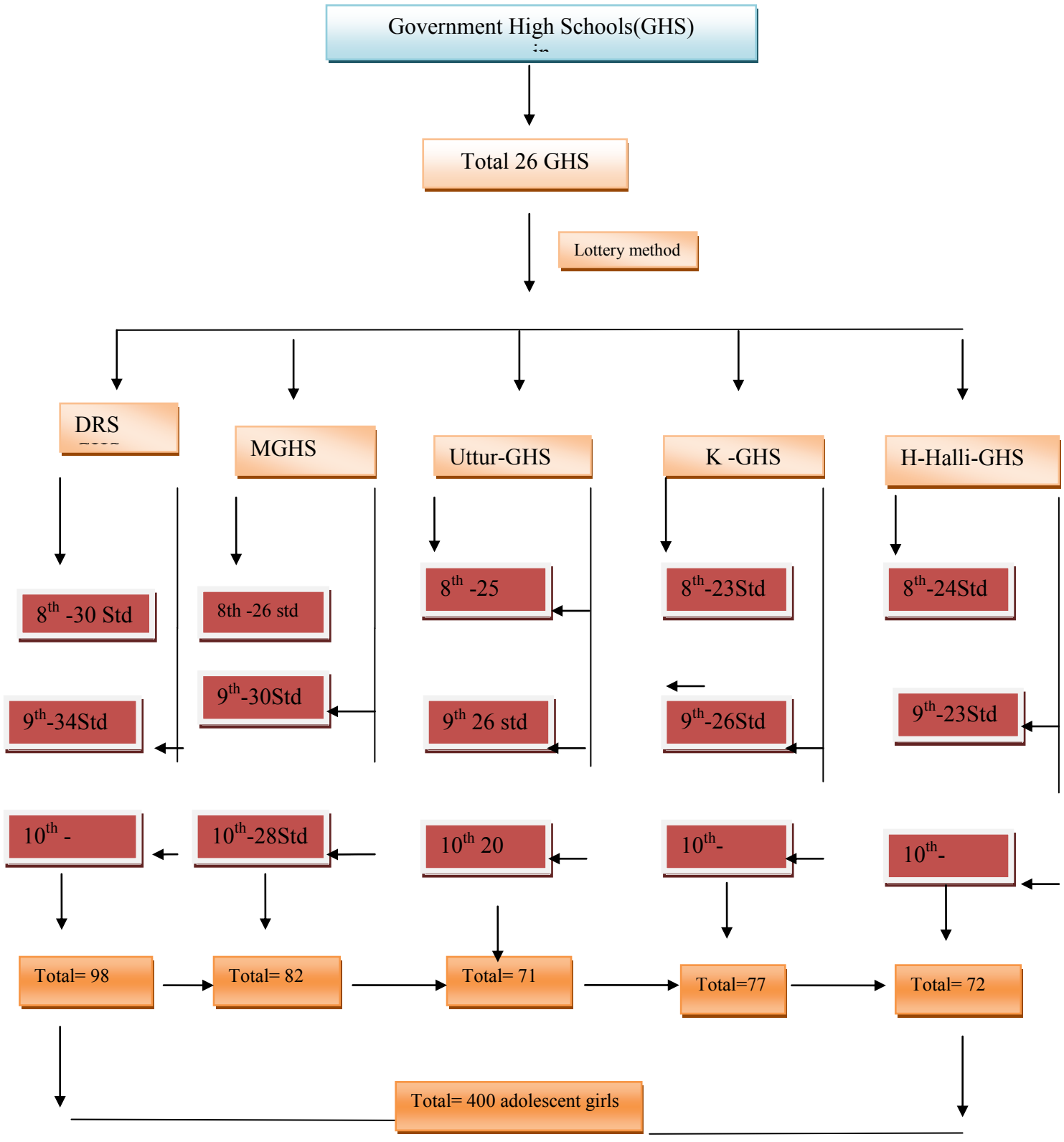


Fig:- 3 Schematic representation of sampling technique

- List of GHS in, rural Kolar was prepared and it consists of 26 numbers.
- Five government schools such as Devaraya samudhra Government High School, Mudhavadi Government High School, Uthanuru GHS, Hanumanahalli GHS and Kembodi Janatha GHS school were selected through lottery method.
- Then from selected schools, all 8^{th}, 9^{th} and 10^{th} standard female's who fulfill inclusion criteria are selected . Formal written consent was taken from head master and permission from students.
- A grand-total of 400 adolescent-girls become the sample current research who are selected from five govt high schools
- **Sampling criteria**

Inclusion criteria:

Adolescent girls who were;

1. Between 13-16 years age group of
2. Studying in government high school,
3. Willing to involve in research and
4. Available at data collection time.

Exclusion criteria: Adolescent girls who were;

1. On treatment for menstrual disorders

Setting of the study

Research was carried out in rural GHS Kolar taluk. In kolar taluk total 335 villages, out of 335, twenty six villages were having government high schools. The total strength adolescents studying among 26 schools were 17,761.

Variables:

Dependent variable: Biophysiological parameters and knowledge study participants

Independent variable: an teaching intervention **i.e. "**PTP" on management of menstrual disorders & nutritional anemia.

Validation of the tool and PTP:

Based on the research problem and objectives study, researcher used the following methods to develop structures questionnaire on knowledge, PTP and checklist on biophysiological parameters;

- Reviewed the related literature,
- Consulted the research and subject experts

Description of the tool:

Examiner used the following three sections of tools;

Section-A:Socio demographic data: This section consists of 08 items which includes age, religion, parents educational, parents occupation, type of food and source of information.

Section-B: **Structures Knowledge questionnaire:** which consists of 52 items on management of menstrual disorders & nutritional anemia and it was distributed under 09 areas as follows;

Scoring system:

For the knowledge questionnaire, one mark was awarded for the correct answer and no mark was awarded for wrong answer. The total score was 52. Then the scoring interpretation was given below;

Who scored <50 % - considered as Inadequate knowledge

Who scored 50-75% -considered as a moderately adequate knowledge.

Who scored >75% -considered as Adequate knowledge.

Section-C:

Biophysiological parameters: This section consists of 4 items such as height, weight, Hb% and BMI. Biophysiological parameters are assessed using standardized instruments;

The Biophysiological parameter was recorded with observation made by the researcher. Then the collected measurements were interpreted based on WHO guidelines.

Explanation of the prepared coaching programme:

For preparing coaching programme the following steps were used Reviewed the related literature,

- Consulted the subject experts

Then the content on menstrual disturbance & nutritional anemia was prepared below mentioned steps:

1. Introduction to growth & development
2. Physiological changes in adolescent period.
3. Briefed about female reproductive system
3. Monthly periods & menstruation
4. Management of Menstrual problems;
    - Premenstrual syndrome,
    - Dysmenorrhea,
    - Prolonged periods,
    - Delayed and frequent periods.
5. Anatomy and Physiology of blood & its components

7. Nutritional deficiency anemia and its management

8. Conclusion

Validity:

The prepared instrument along with objectives, lesson plan on structured teaching programme and criteria checklist were submitted to 07 research and subject experts to check for comprehensiveness, adequacy and appropriateness of the topic and corrections were received from all experts. (details enclosed in Annexture-I)

Translation of tool:

The tool and lesson plan were translated by language expert from English to Kannada and vias versa. The tool was translated in to Kannada since study subjects communication and understanding were only in Kannada.

Item analysis:

According to Gilbert a question with difficulty index between 30percent to 70 percent is acceptable and question with a discriminating value more than 0.25 to 0.35 is considered as good questions.

item analysis was done based on the responses elicited by the adolescent girls/samples.The items having difficulty index between 30percent to70 percent and discriminating value above 0.25 to 0.35 were retained. Few items less than 30percent is difficulty-index score is while less than 0.25 discrimination index value (14,16,17,21,23,28,36,47,48,56,57,60,&63) were deleted from structured questionnaire on knowledge. Totally 52 questions were selected for the final study.

Reliability:

Is a major criteria for assessing the quality and adequacy of the tool. It was computed by using test-retest and split half technique with raw score method using spearman brown prophecy formula.

Spearman's Brown Prophecy formula r1=2r/1 +r

Where, **r =** Correlation coefficient computed on split halves

r1= The estimated reliability of entire test.

a) Test-re-test reliability: This was conducted on 40 adolescent girls.

The test-re-test reliability was 0.96 so considered tool was reliable

b) Split half reliability: For 40 samples, 0.94 obtained score.

Ethical clearance

From institutional ethical committee of Sri Devaraj Urs University Ethical clearance was obtained.

Pilot study

In Harati Govt High school pilot study was carriedout. among 40 adolescent girls i.e."10% actual sample" were selected, who fulfilled inclusion criteria. by Through simple random sampling method. Pilot study was conducted on 01/01/2016 to 9/03/2016. The study findings depicted as follows.

The socio-demographic data of study subjects revealed that;

- Sixty percent adolescent girls are 15year old, 35% of are in the age of 16 yrs and 5% of them were with the age group of 14 years.
- nearly 52.5% adolescentgirls were belongs to nuclear-family and 47.5% of them were belongs to joint family.
- With regard to kind of food, [97.5%] maximum adolescent girls were taking mixed-diet and 22.5% samples taking vegetarian diet.
- In terms of to adolescent-girls father occupation, majority (40%) working as a formers, 40% working in private sector, 10% doing their own business and 10% working in government sector.

- Related to educational status, bulk (50%) of adolescent-girls fathers completed primary education, 27.5% of them completed basic education, 20% of them were completed SSLC and only 2.5% completed PUC.
- In view to occupation of mothers, most (30%) are house wife, sixty-five percent parents working as formers or doing farming work, remaining 7.5% of them are working in private sector.
- In terms of qualification of mothers, most (45%) them completed higher primary education, 37.5% studied upto primary education & 17.5% completed SSLC.
- In context of basis for data on menstrual problems and its M_x, at most 72.5% got information from parents and classmates , 22.5% girls received from teachers and only 2% received from mass media.

Knowledge level & biophysiological parameters on management of menstrual disorder & nutritional anemia among adolescent girls

- The sum-off knowledge score in pretest **on** managing of menstrual disorder & nutritional anemia of adolescent girls revealed that, out of 40 students, 20 students scored below 26 and another 20 students scored b/w 26-36 and none of them score above 40.
- With regard to BMI, 22.5% and 37.5 % of adolescent girls BMI was below normal (underweight) in the age group of 15years and 16 years respectively.
- With regard to Hemoglobin %, 15% and 45 % of adolescent girls Hb% was below normal **"7-10gm/d lit "** in 15 yrs & 16 Yrs respectively.

Effectiveness of PTP on management of menstrual disorder & nutritional anemia among adolescent girls

Table:-1 explains about comparison of overall mean knowledgescores of pre & post test on managing of disorders R/T menstruation & disorders related nutritional deficiency. The

overall mean knowledge score of pretest was 25.0 SD of 4.59 & mean knowledgescore posttest was 36.6 ± 3.49 significant at 0.05 level. The obtained t- value was 18.score show that education activity was successful.

Efficiency of PTP on Biophysiological parameter

The above table-2 depicts that comparison of overall pre & post test mean biophysiological parameter of adolescent girls. The overall mean BMI score was 18.4± 0.51 of and the post test mean BMI was 18.3 ± 0.52 at p0.00. The obtained t-test value was 1.97(2.02) this indicates "no statistical significance"

The overall meanHb%score was 10.8 ±0.98 & the posttest mean Hb% was 10.7 ± 0.89. The obtained t-test value was 1.97(2.023) disclosed that "no statistical significance" at p0.00

Involvement of knowledge scores of posttest with selected socio demographic variables

In relation to the association of knowledgescores of post test with certain socio demographic-variables show that, "no association" between adolescent girl's knowledgescore with elected socio demographic variables.

Table-3 Correlate between knowledge scores and Biophysiological parameters.

Table:3 findings shows that total mean posttest knowledge scores on executing of menstrual disorders and nutritional deficiency disorders was 36.63, and the average value of Biophysiological parameter "BMI"&Hb% by adolescent girls were 18.3 & 10.7 with correlation co-efficiency 0.24 & 0.25 respectively .

Conclusion:

Pilot study finding can be concluded that.

- Adolescent girls presented an average level of knowledge on managing of menstrual disorders & nutritional anemic In pre test & afterward PTP of "adolescent-girls" knowledge scores was" above average level".
- With regard to the association "There was no association" b/w scores of knowledge with selected socio-demographic variables except age.
- Pilot study findings disclosed the significant gain in knowledge and there is "no association" among knowledge scores with socio demographic variables where as there no changes found in biophysiological parameters i.e height,weight BMI & HB values of adolescent girls.

Data collection procedure:

From 10/06/17 to 9/07/17 data collection was done as follows

First phase: preparation phase

School were selected through random sampling the and formal permission from school head master was obtained. and conformed the date & time for data collection. On the day of data collection, the procedure was explained to the study subjects and informed consent was obtained from them.

Second phase : Intervention phase

For all samples structured questionnaire on knowledge was administered and their biophysiological parameters includes height weight, and Hb% were assessed. Followed by PTP on similar day was administered for about 50 minutes. Then after one month a post-test on knowledge and biophysiological parameters was done using same tools.

Method of data analysis

Following statistical methods used for analysis of data.

- To calculate frequency, percentage, mean, standard deviation "Descriptive statistics" methods used & assess the level of biophysiological parameters and knowledge of adolescent girls
- "Paired 't' test" was used for tally the pre and post test scores
- Inferential statistics like chi-square was used to find out the association between post test knowledge scores with socio-demographic variables.
- to correlate knowledge scores with their biophysiological parameters "Spearman correlation " test was used

Summary:

This chapter dealt with the research approach, research method, study setting, sampling design, sampling technique, tool-construction, and data collection method, plan for data analysis. The next chapter deal about analysis of data using above statistical methods.

CHAPTER - V

ANALYSIS

This section deals with the examination and explanation of the facts gathered to evaluate the efficiency of designed health education on understanding and Biophysiological Parameters of Adolescent Girls regarding Management of Menstrual Disorders and Nutritional Anemia .

The scrutiny and explanation of information is depending on the data collected from adolescent girls through structured knowledge questionnaire and biophysiological parameters from observation scale using standard-instruments. The outcome was computed using mean media, standard deviation and paired t-test Chi square test and correlation test.

Primary objectives:

1. Assess the Knowledge on Management of Menstrual disturbances & dietary deficiency anemia among Adolescentgirls using Structured Knowledge Questionnaire.
2. Appraise the helpfulness of designed health education on level of Knowledge about Menstrual disturbances & dietary deficiency anemia with teenage girls by judging the knowledge before & after health education.
3. To Conclude the relationship between Level of Knowledge on Management of Menstrual disturbances and Dietary-deficiency-anemia with their selected Socio demographic Variables after performance of intervention.

Secondary objectives:

1. Assess the Biophysiological Parameter of young Girls using Observational Scale
2. Estimate the efficacy of intended pedagogies Programme on adolescent girls on Biophysiological Parameter by comparing before and after observational-values.

3. Determine the union of BMI & Hb% of adolescent girls with particular Socio-demographic Variable after execution of intervention.
4. Correlate between Knowledge-Scores & Biophysiological Parameters subsequent to the educational activity

Based on the above objectives, the following research hypotheses were stated.

Null hypothesis:

- H_{01}: There is no considerable variation in pre-test and post test knowledge-score on managing of menstrual-disorder & nutritional-anemia among high school girls**.**
- H_{02}: There is no major relationship between knowledge_scores with selected socio and demographic characteristics.
- H_{03}: There is insignificant alliance between Biophysiological_parameters with selected demographic characteristics.
- H_{04}: There is no noteworthy correspondence among knowledge_scores and Biophysiological parameter following execution of PTP.

Based on the objectives and hypotheses of the study, the data collected were tabulated, organized and presented under the following sections:

Section-I: allocation of adolescent girl on the basis of their socio demographic data

Section-II: Pre evaluation of acquaintance and biophysiological aspect of adolescent Girls

Section-III: Efficiency of structured-teaching-progeamme regarding the level of familiarity & Biophysiological Parameter

Section-IV: Interrelation of cognition gain in the company of selected Socio-demographic variables.

Section-V: Coalition by bio-physiological parameter selected Socio-demographic variables

Section-VI: Interconnection allying awareness and biophysiological-parameter

SECTION-I

ALLOTMENT OF ADOLESCENT FEMALES ON THE BASES OF SOCIO DEMOGRAPHIC DATA

This segment deal by frequency and percentage distribution of youngster girls related to their socio-demographic figures. Prior test the awareness and biophysiological parameters, teenager girls are assess for their socio-demographic data and obtainable from table 1 to table 9.

TABLE-1: DIVISION OF ADOLESCENT GIRLS BASED ON THEIR AGE

N=400

SL. NO	Age in years	Frequency	Percentage
1	13-14yrs	127	31.75
2	14-15yrs	113	28.25
3	15-16yrs	160	40
	Total	**400**	**100**

The on top table showed that majority (40%) of teenage girls were belongs to 15-16 year age group whereas (28.25%) are comes under the age of 14-15 years and (31.75 %) of adolescent girls belongs to 13-14 years of age group.

TABLE-2: RELIGION WISE ALLOTMENT OF ADOLESCENT GIRL

N=400

Sl. NO	Religion	Frequency	Percentage
1	Hindu	368	92
2	Muslim	27	6.75
3	Christina	5	1.25
	Total	400	100

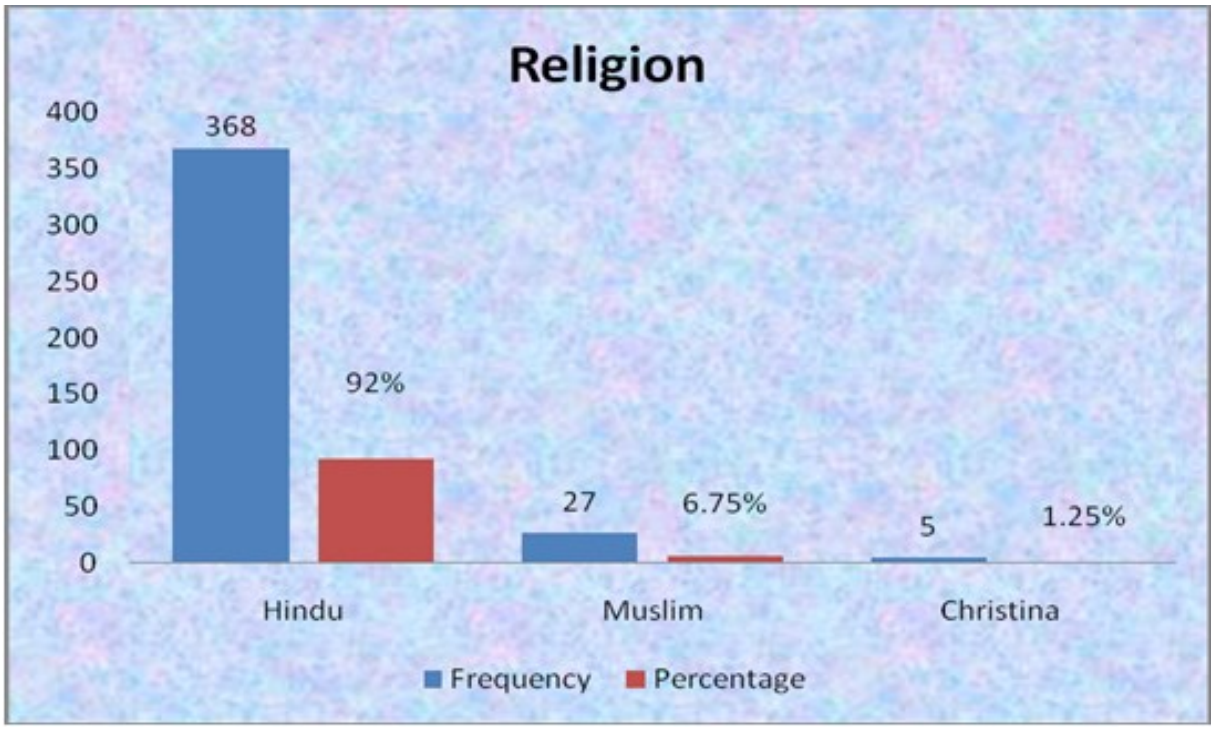


Table-2 and Bar diagram show that greater part 92% of young girls were comes under hindu religion, sis point seven five percentage of them were Muslims & just 1.25% were Christians.

TABLE-3: DIVISION OF ADOLESCENT GIRLS BASED ON THEIR TYPE OF FAMILY

N=400

Sl. NO	Type of family	Frequency	Percentage
1	Nuclear	240	60
2	Joint	160	40
	Total	**400**	**100**

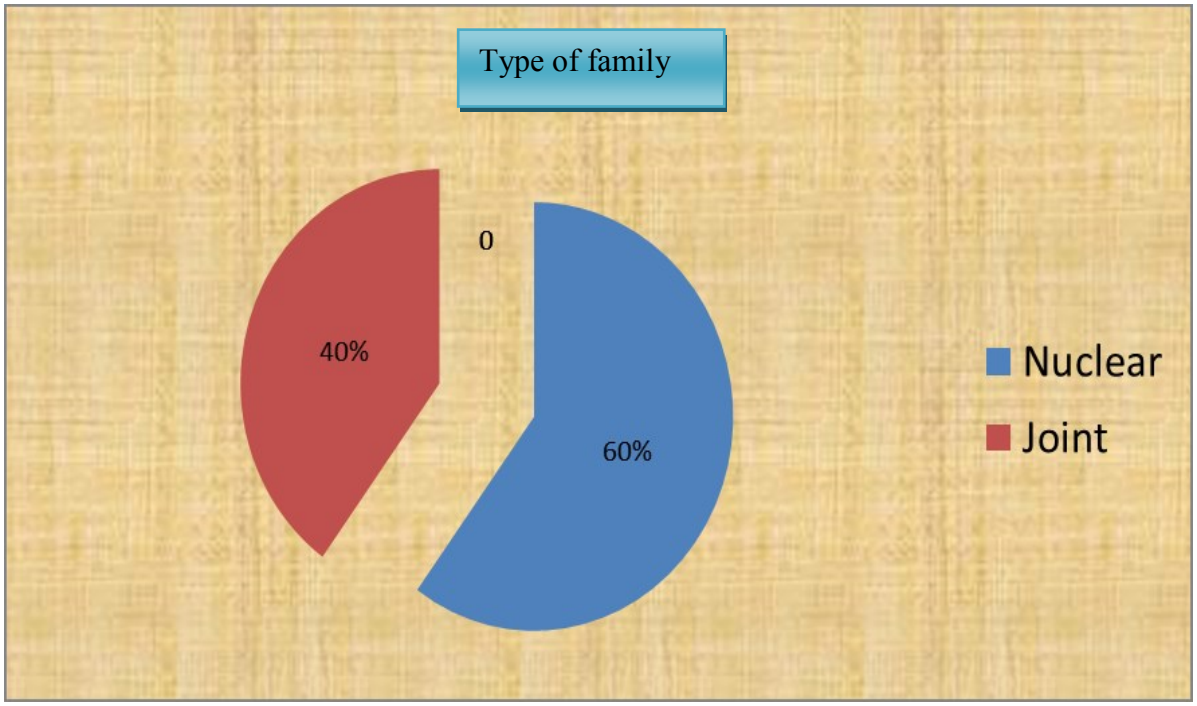


Table:-3 and Pie diagram shows that mainstream (60%) of minor girls were belongs to Nuclear family & merely 40 % adolescent girls come from joint family.

TABLE-4: ALLOCATION OF ADOLESCENT GIRLS BASED ON FATHERS EDUCATION

N=400

Sl. No	Education of father	Frequency	Percentage
1	Primary education	205	**51.25**
2	SSLC	155	38.75
3	PUC	030	7.5
4	Degree	10	**2.5**
	Total	**400**	**100**

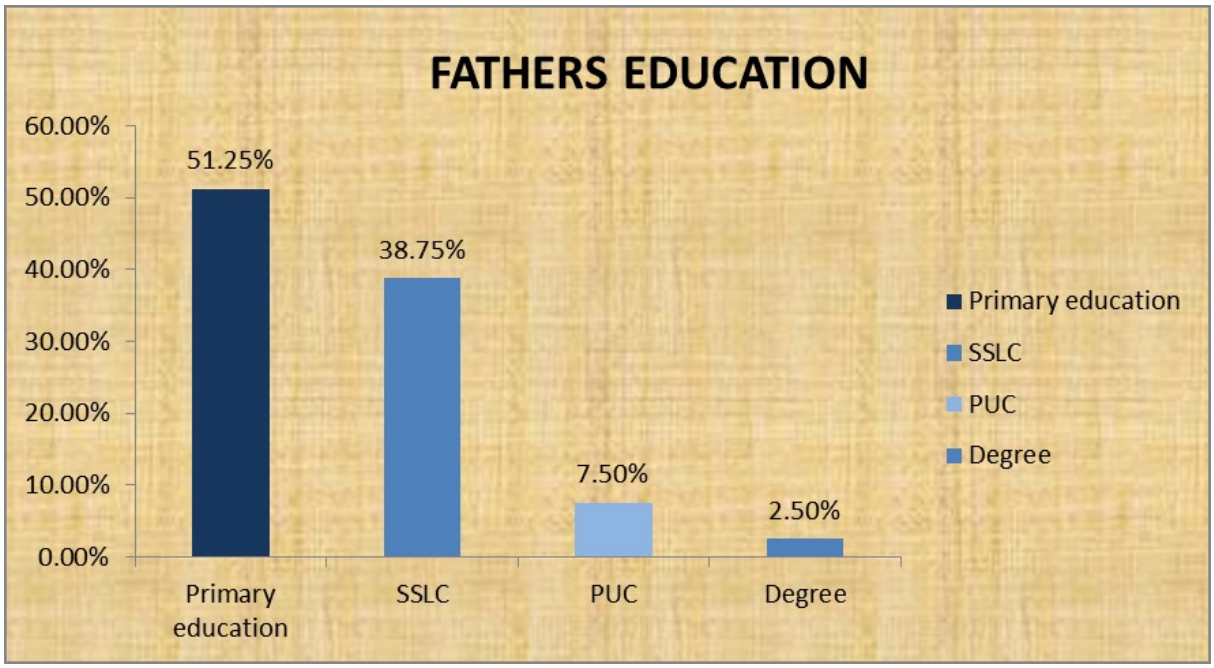
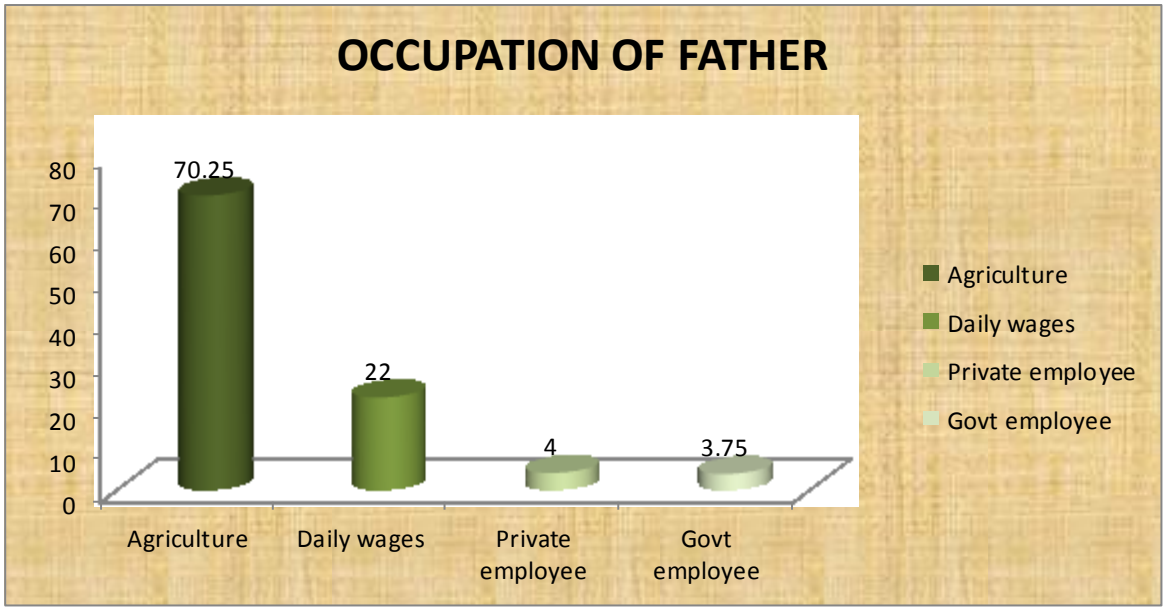


Table:-4 & slab diagram shows that, bulk 51.25% of young girl's fathers were completed primary education and just (2.5 %) their fathers are graduated. Remaining 38.75% of with SSLC and 7.5% of with PUC qualification.

TABLE-5: BASED ON THEIR FATHER OCCUPATION, DISTRIBUTION OF ADOLESCENT

N=400

Sl. No	Occupation of Father	Frequency	Percentage
1	Agriculture	281	**70.25**
2	Daily wages	88	22
3	Private employee	16	4
4	Govt employee	15	**3.75**
	Total	**400**	**100**



The above table and Cylindrical diagram showed that, majority (70.25%) of adolescent fathers were agriculture work, 22% are daily wage workers,only 4% of working as a private employees and 3.75% of them were government employees.

TABLE-6: DISTRIBUTION OF ADOLESCENT GIRLS BASED ON MOTHERS EDUCATION

N=400

Sl. No	Education of mother	Frequency	Percentage
1	Primary education	203	**50.75**
2	SSLC	161	40.25
3	PUC	034	8.5
4	Degree	002	**0.5**
	Total	**400**	**100**

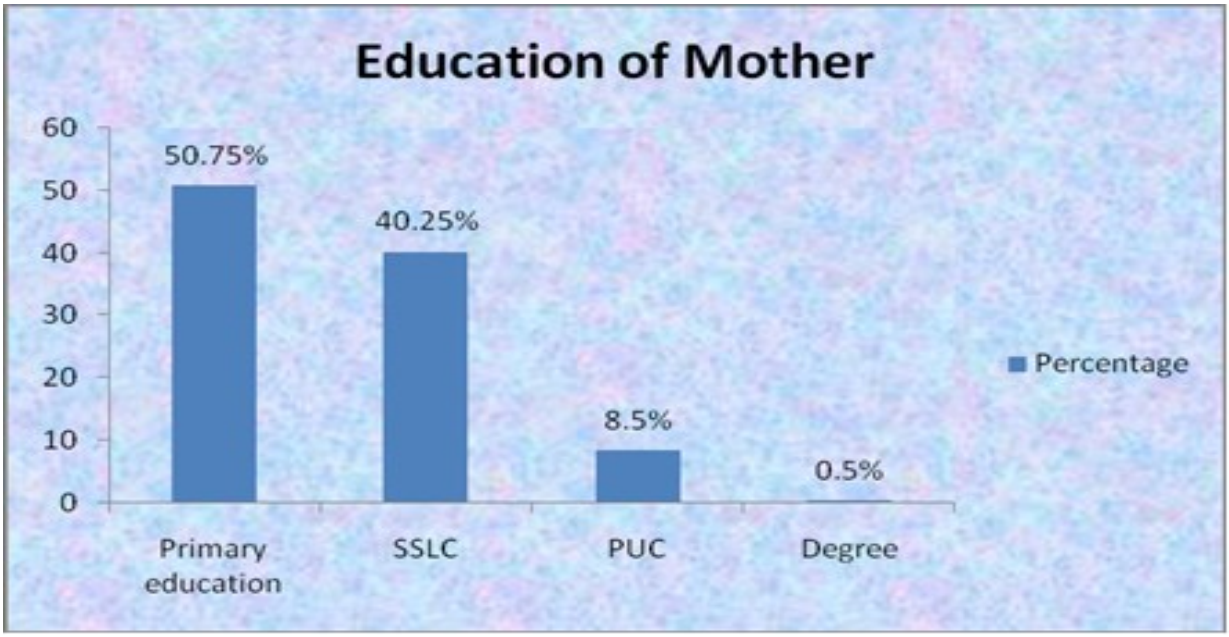
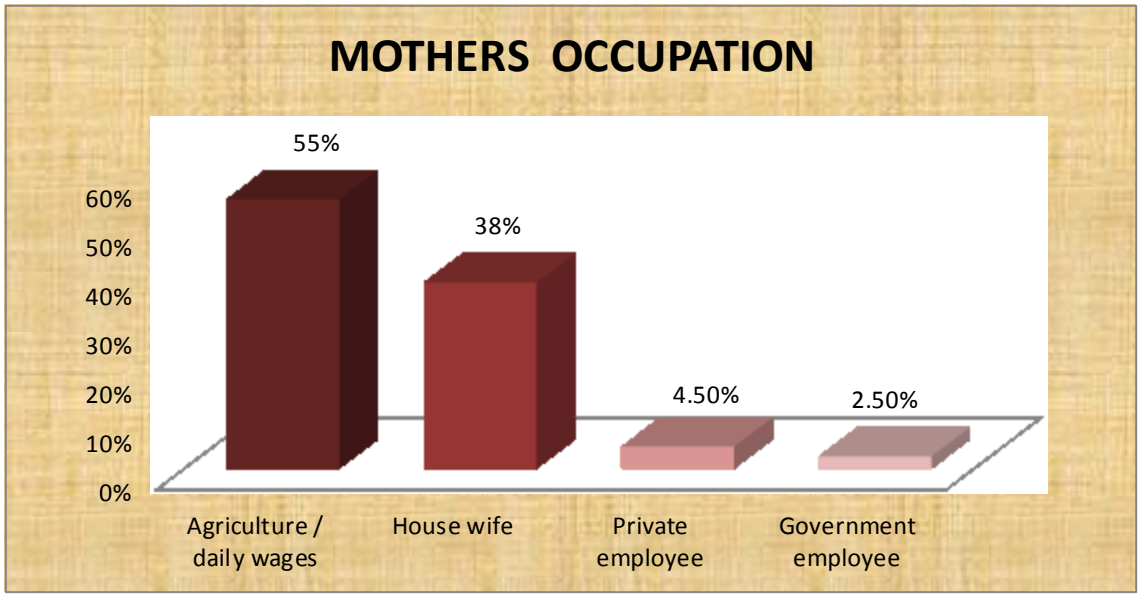


Table:-6 & block diagram showed that majority 50.75% of adolescent girls mothers were with primary schooling, (40.25 %) of them are qualified with SSLC, 8.5% were with PUC, and only 0.5% were with Degree.

TABLE-7: DISTRIBUTION OF ADOLESCENT GIRLS BASED ON MOTHERS OCCUPATION

N=400

Sl. NO	Occupation of mother	Frequency	Percentage
1	Agriculture / daily wages	220	**55**
2	House wife	152	38
3	Private employee	18	4.5
4	Government employee	10	**2.5**
	Total	**400**	**100**

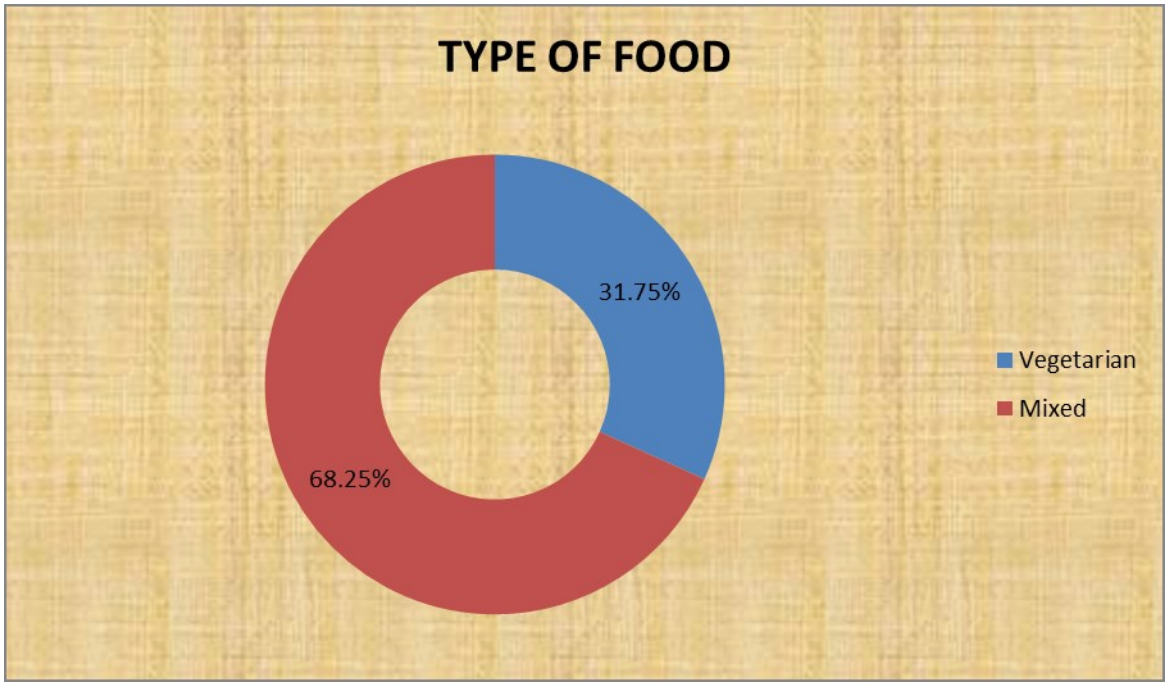


The above table and **Bar diagram** debits that, most (**55%**) of the youngsters them were working as formers or doing farming work as daily earnings, whereas thirty_eight percent are house wife's, 4.5% of are functioning in corporate sector & no more than **2.5**% **are** working in government sector.

TABLE-8: BASED ON TYPE OF FOOD ADOLESCENT GIRLS ALLOCATION

N=400

Sl. NO	Type of food	Frequency	Percentage
1	Vegetarian	127	31.75
2	Mixed	273	68.25
	Total	**400**	**100.0**

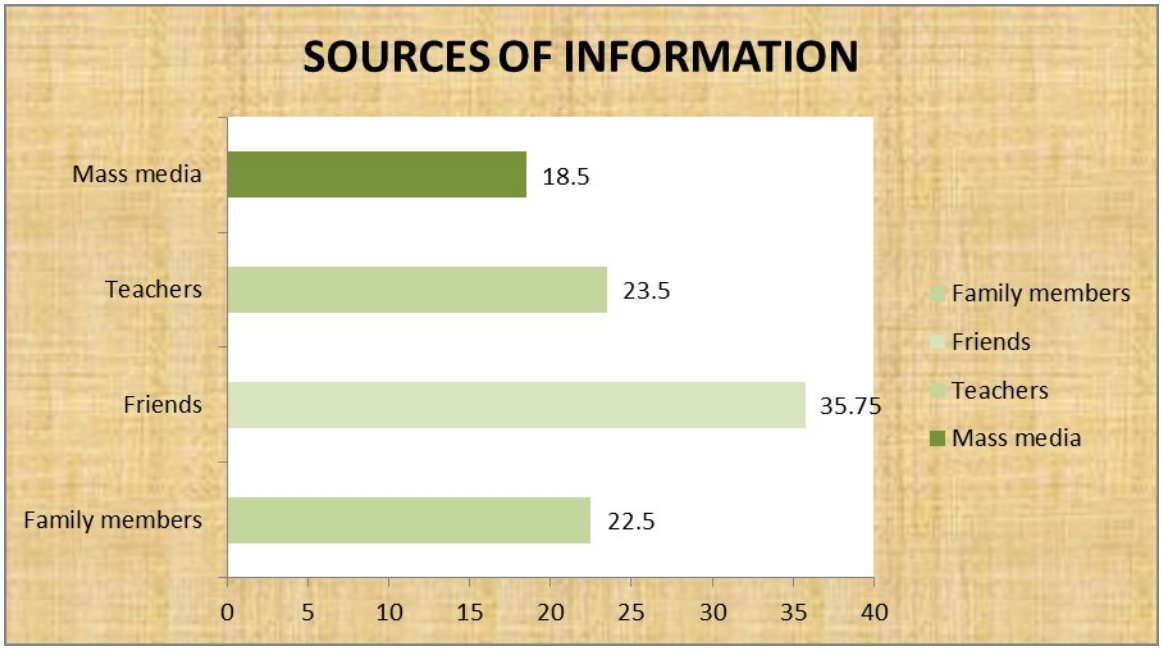


Above table and pie diagram shows that, upper limit 68.25 % of adolescent_girls were taking mixed diet έ [31.75%] girls taking vegetarian diet.

TABLE-9: ALLOCATION OF ADOLESCENT GIRLS BASED ON SOURCE OF DATA

N=400

Sl. NO	Source of information	Frequency	Percentage
1	Family members	90	22.5
2	Friends	143	**35.75**
3	Teachers	94	23.5
4	Mass media	73	**18.5**
	Total	**400**	**100**



The above table & ingot graph explains about adolescent girls in relation to basis for information. Majority (35.75%) of them get data On management of menstrual disorders and nutritional anemia from their friends, 22.5% of them got from their family member, 23.5 % of them got from their teachers and only 18.5% of them got from mass media.

SECTION-II

PRE ASSESSMENT OF KNOWLEDGE AND BIOPHYSIOLOGICAL PARAMETERS OF ADOLESCENT GIRLS

This section deals with **first objective** of the research that was to assess **the Knowledge and** bio_physiological Para-meters of adolescent-girls **on Management of Menstrual disorder** and dietary deficiency anemia **.** To consider the understanding and biophysiological parameters, investigator use explanatory like frequency, percentage, mean percentage, standard deviation and and inferential statistics t-test and the data were presented from table-10 to table-17

TABLE-10: DISTRIBUTION OF PRE TEST KNOWLEDGE SCORES ON FEMALE REPRODUCTIVE SYSTEM

N=400

Sl No	Items	Correct response	
		No	%
1	Female reproductive system composed of uterus, fallopian tube, ovary & vagina	**294**	**73.5**
2	Ovulation meaning release of female egg	292	73
3	Menstruation means monthly bleeding	285	71.25
4	Usually monthly bleeding occurs once in 28 days	220	55
5	Usually monthly bleeding lasts for 3-5 days	197	49.5
6	Amount of blood loss during monthly bleeding is 30-40ml	**135**	**33.75**
7	First menstrual cycle is known as Menarche	137	34.25

The above table depicts point-wise comprehension scores of adolescent girls on reproductive system and menstruation, in that 7 items. The highest knowledge level ***73.5 %*** be seen-in the item on "**Female *Rep*roductive *sys*tem composed ofuterus, fallopian tube, ovary & vagina"** before & after the intervention as well as the lowly 3*3.75 %* were see in the item on "**Amount of blood loss during monthly bleeding is 30-40ml**" in pretest and in posttest the smallest *74.5 %* was seen-in the item on Menstruation means monthly bleeding. Remaining three items i.e. ovulation means release of female egg (73%) (77.25%), menstruation means monthly bleeding (71.25%)(75.25%) and Usually monthly bleeding occurs once in 28 days (55%)(79.5%) had moderately adequate knowledge. First menses is known as menarche *34.25%* having insufficient information.

TABLE:- 11 ITEM WISE DISTRIBUTION OF KNOWLEDGE SCORES ON PREMENSTRUAL DISORDERS

N=400

Sl. No	Items	Correct response	
		No	%
1	Premenstrual syndrome means discomfort occurring before menstrual cycle	192	48
2	Premenstrual syndrome is characterized by Irritability, low mood, Anxiety, lassitude, Breast tenderness & bloating	163	40.75
3	The most important part of premenstrual syndrome management is eating balanced diet	**125**	**31.25**
4	Diet which need to avoid during premenstrual period is avoiding to take more coffee & tea	**202**	**50.5**

The above table depicts "individual question" knowledge_scores of "adolescent girls" on premenstrual disorders. In which 4 items are there . The highest knowledge level (50.5%) was seen item on "**Diet which needs to avoid during premenstrual period is avoiding to take more coffee & tea"** and the small percentage (31.25%) of item was seen in **"The most important part of PMSmanagement is eating balanced diet**." Remaining two items i.e. PMSmeans discomfort occurring before their menstrual cycle (48%) and PMS is characterize by Irritability, low mood, anxiety, lassitude, Breast tenderness & bloating (40.75%) they had inadequate knowledge.

TABLE- 12 ITEM WISE DISTRIBUTION OF KNOWLEDGE SCORES ON DYSMENORRHEA

N=400

Sl. No	Items	Correct response	
		No	%
1	Pain in abdomen at the time of menstruation is known as Menstrual cramp	**214**	**53.5**
2	The common symptom of dysmenorrhea is Pain in the abdomen, lower back, around the hips & inner thigh, abdominal bloating & breast sensitivity	134	33.5
3	Dysmenorrhea can be reduced by intake of warm fluids , Practice of yoga, exercise and wholesome diet	**132**	**33**
4	Dysmenorrhea can be treated with mild analgesic, hot application and massage	192	48

The above table depicts *Item_Wise* knowledge level of adolescent-girls on Dysmenorrhea. There were 4 items. The **highest knowledge level (53.5%)** was seen item on "**Pain in abdomen at the time of menstruation is known as Menstrual cramp"** and the **lowest (33%)** was seen in item on "**Dysmenorrhea can be reduced by intake of warm fluids, Practice of yoga, exercise and wholesome diet."**. Remaining two items they had inadequate knowledge i.e. The common symptom of dysmenorrhea is Pain in the abdomen, lower back, around the hips & inner thigh, abdominal bloating & breast sensitivity (33.5%) and Dysmenorrhea can be treated with mild analgesic, hot application and massage (33%).

TABLE-13 ITEM WISE DISTRIBUTION OF KNOWLEDGE SCORES ON PROLONGED PERIODS

N=400

Sl. No	Items	Correct response	
		No	%
1	Prolonged periods means Blood loss during monthly cycle more than 80ml	222	55.5
2	One of the symptom of heavy periods Passing large blood clot in each monthly cycle	**150**	**37.5**
3	One of the common side effect of prolonged periods Iron deficiency anemia	**225**	**56.25**

The above table depicts item wise knowledge scores on prolonged periods. There were 3 items. The **highest knowledge level (56.25%)** was seen in item on "**One of the common side effect of prolonged periods Iron deficiency anemia",the lowest (37.5%)** was seen in item on **"One of the symptom of heavy periods Passing large blood clot in each monthly cycle"** and55.5% was seen on Prolonged periods meansBlood loss during monthly cycle more than 80ml.

TABLE- 14 ITEM WISE DISTRIBUTION OF KNOWLEDGE SCORES ON DELAYED AND FREQUENT PERIODS

Sl. No	Items	Correct response	
		No	%
1	Monthly bleeding occurs at an interval of less than 21 days called as frequent period	**273**	**68.25**
2	Common cause for frequent period is Obesity & BMI	234	58.5
3	To control frequent periods, Lifestyle changes, Oral contraceptive pills and Over the counter drugs are advised	**162**	**40.5**
4	Monthly bleeding occurs for more than 35 days called as delayed period	193	48.25
5	The reasons for delayed periods is weight gain, anemia and hormonal imbalance	241	60.25

The above table depicts adolescent girls knowledge scores (item-wise) on Delayed and frequent periods. There were 5 items. The **highest knowledge level** fifty-six. Two five Percent is seen_in item on "**Monthly bleeding occurs at an interval less than 21 days"** and **the lowest** (40.5%) was seen in item on "**To control frequent periods, Lifestyle changes, Oral contraceptive pills and Over the counter drugs are advised**". Remaining two items, i.e. the reasons for delayed periods is weight gain, anemia and hormonal imbalance (60.75%) and Common cause for frequent period Obesity & BMI 58.5% having somewhat satisfactory knowledge, and in one item i.e. Monthly flow occur for > 35 days called as Frequent period (48.25%) they had inadequate knowledge.

TABLE-15 ITEM WISE DISTRIBUTION OF KNOWLEDGE SCORES ON MANAGEMENT OF MENSTRUAL DISORDERS

Sl. No	Items	Correct response	
		No	%
1	Vitamin which helps in reducing menstrual pain is VitaminB6	**268**	**67**
2	The fruit rich in Vit B6 is Banana	266	66.5
3	The spicy product which helps in regulating menstrual cycle is Sesame seed	233	58.25
4	The plant which helps in maintaining normal menstrual cycle is Alovera	211	52.75
5	The herb which is helpful in balancing hormones during monthly bleeding is Turmeric	**185**	**46.25**
6	The seed which helps in treating oligomenorrhea is Coriander seeds	198	49.5
7	Cramping pain & premenstrual syndrome can be reduced by using Fennel (jeera)	214	53.5
8	The leaves which helps in regulating regular menstrual cycle is Mint leaves	248	62
9	The tuber which helps to boost proper hormone function during monthly bleeding is Carrot	200	50
10	The flower which helps in regulating estrogens and progesterone for regular periods is Hibiscus	193	48.5
11	Menstrual cramps trigger due to deficiency of Potassium& Calcium	241	60.25
12	Skimmed milk is rich in Calcium	192	48

The above table depicts ITEM WISE *KNOWLEDGE SCORES* of adolescent girls on managing of menstrual disturbance. In which 12 items are there. The **highest knowledge**

point 67% seen -in item on "Vitamin which helps in reducing menstrual pain *is* VitaminB*6*" and the **lowest (46.25%) was seen in item on "The herb which is helpful in balancing hormones during monthly bleeding Turmeric**". Remaining seven items on, The fruit rich in Vit B6 is banana (66.5%), The spicy product which helps in regulating menstrual cycleSesame seed(58.25%), The plant which helps in maintain typical menstrual seriesAlovera (52.75%) Cramping pain & PMS can be reduced by usingFennel (jeera**)** (53.5%) The leaves which helps in control of normal monthly periods is mint leaves (62%), Menstrual cramps trigger due to deficiency of Potassium & Calcium (60.25%) adolescent girls having reasonably enough awerness and in one item i.e.on Skimmed milk is rich in (48%) "**Ca"** young girls having in-adequate knowledge.

TABLE-16: DISTRIBUTION OF KNOWLEDGE SCORES MENSTRUAL DISORDERS

N=400

SL.No.	Area wise knowledge	Num of items	Range	Mean	Mean %	Standard deviation
1	Female reproductive system and menstrual cycle	7	3-6	3.89	**55.5**	1.00
2	Premenstrual syndrome	4	0-3	1.82	45.5	0.70
3	Dysmenorrhea	4	1-3	1.78	44.2	0.56
4	Prolonged periods	3	1-2	1.49	49.6	0.52
5	Delayed and frequent periods	5	1-4	2.71	54.2	0.78
6	Management of menstrual disorders	12	2-6	4.56	**37.9**	0.89
	Total	**35**	12-22	16.26	**46.4**	**1.96**

The above table depicts area wise mean and mean percentage knowledge scores on management of menstrual disorders. There were six area. The maximum mean percentage (55.5%) observed in the area of "***Female Reproductive System*& menstrual cycle**" **And** stunted percentage (37.6%) observed in an area "***managing of menstrual disorder***". Remaining three areas (Pre menstrual syndrome, Dysmenorrhea and longer periods), the "adolescent girls" had inadequate "knowledge" & in one area (delayed and frequent periods), they had moderately adequate knowledge.

Based on the f & %, overall knowledgescores obtained from adolescent girls were grouped under Inadequate (who scored less than 50%), moderately adequate (who scored 51 to 75%) and adequate (who scored above 75 %) Knowledge and accessible in table-17.

TABLE-17: DISTRIBUTION OVER ALL KNOWLEDGE SCORES OF ADOLESCENT GIRLS **N=400**

Sl. No.	Knowledge score	Frequency	%
1	Below 50%	287	71.75
2	50 – 75%	113	28.25
3	Above 75%	-	-
	Total	**400**	**100**

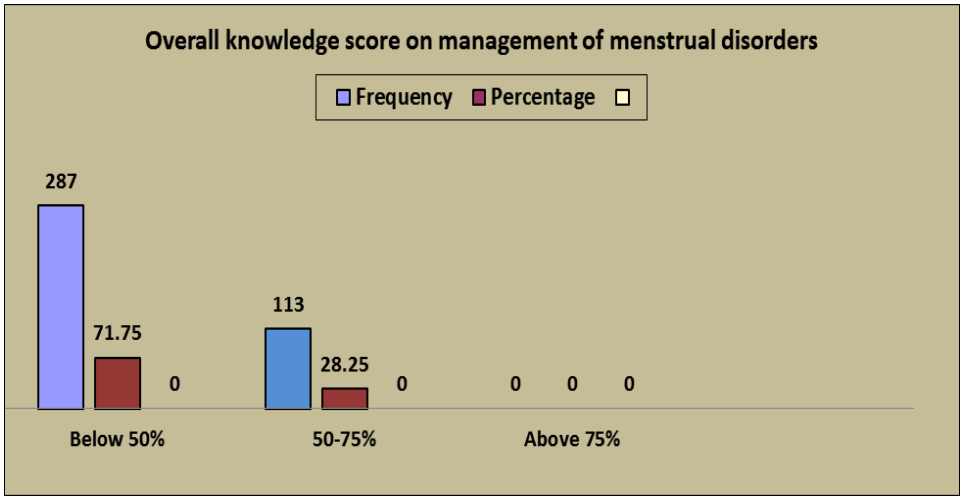


Table_17 & and graph explains the Overall Knowledgescores of adolescent girls on *Managemen*t of menstrual disorders. Mainstream (71.75%) of the "adolescent girls" had "inadequate knowledge", 28.25% of them had fairly satisfactory level of Knowledge & no one of had sufficient familiarity.

TABLE- 18: DISTRIBUTION OF KNOWLEDGE SCORES ON ANATOMY AND PHYSIOLOGY OF BLOOD

N=400

Sl. No	Items	Correct response	
		No	%
1	Blood constitute of RBC WBC & Platlets	237	59.25
2	In RBCS the product which carries oxygen is Haemoglobin	198	**49.5**
3	Normal range of haemoglobin in adolescent girls is12 to 14 g per dl	245	**61.25**

The above table depicts item wise knowledge scores by adolescent-girls on anatomy & Physiology of blood". There were 3 items. The **highest knowledge *Score 61.25 % observed* item on "Normal range of hemoglobin12-14gm/dl**" in adolescent girls is and **the lowest (49.5%) knowledge scores** be seen-in the area on **"In RBCS the product which carries oxygen is Haemoglobin**". In one item on "Blood constitute of RBC, WBC and Platelets" moderately adequate knowledge (59.25%) observed.

TABLE- 19: DISTRIBUTION OF KNOWLEDGE SCORES ON SIGNS AND SYMPTOMS OF ANEMIA N=400

Sl. No	Items	Correct response	
		No	%
1	Anemia means decreased level of RBC	**228**	**57**
2	Most common type of anemia among adolescent girls is Iron deficiency anemia	**205**	**52.25**
3	Iron deficiency anemia means decreased amount of vitamin B_{12} in the blood	104	26
4	The main cause of iron deficiency anemia in adolescent girls is Blood loss due to monthly bleeding	144	36
5	Main symptoms of iron deficiency anemia is Curvature of nails	129	**32.25**
6	Vitamin which helps in iron absorption is Vitamin C	182	45.5

The above table depicts point-wise Knowledge scores of on "dietary deficiency Anemia among adolescentgirls". There were 6 items. . The **highest knowledge score** was seen in"A**nemia means decreased level of RBC** (57%) and **the lowest (49.5%) knowledge score** was seenin "**Main symptoms of iron deficiency anemia is Curvature of nails"**. Remaining three items they had inadequate knowledge, such as (26%) in Iron deficiency anemia means decreased amount of vitamin B_{12} in the blood. (36%), on "The main cause of iron deficiency anemia in adolescent girls is Blood loss due to monthly bleeding" and Vitamin which helps in iron absorption is Vitamin C(45.5%). In one item adolescent-Girls having Moderately-Adequate Knowledge i.e. is ***anemia due to*** Iron deficiency (52.25%) common type of anemia among Adolescent-Girls.

TABLE- 20: KNOWLEDGE SCORE DISTRIBUTION ON MANAGEMENT OF ANEMIA

N=400

Sl. No	Items	Correct response	
		No	%
1	In adolescent girls anemia can be prevented by taking food rich in iron, vitamin B_{12} and Vitamin C	214	53.5
2	Vegetables rich in iron content expect drumsticks Cabbage Black Beans	219	**54.75**
3	Green leafs rich in iron is Spinach	189	47.5
4	Rich in iron are pulses, legumes, soya bean and cow bean	104	26
5	Rich in iron among milk and milk product is cheese	96	**24**
6	Fruits rich in vitamin C is Orange, Apple & butter fruit	151	37.75
7	Vegetables rich in vitamin C is Tomato	182	45.5
8	Anemia can also be prevented by Proper intake of iron rich diet	186	46.5

The above table depicts item -wise Knowledge-scores of "adolescentgirls" on "**MANAGEMENT of nutritional anemia**"It has 8 items. And **highest knowledge score (54.75%)**was seen in **vegetable rich in iron content exceptdrumsticks, Cabbage, Black Beans** and **the lowest knowledge score (24%)** was seen **rich in iron among milk and milk products is cheese.** Andin one itemthey had fifty-three point five percent knowledge **i.e** "In adolescent girls anemia can be prevented by taking food rich in iron, vitamin B_{12} and Vitamin C. and remaining five items such as Green leafs rich in iron is Spinach(47.5%),Rich in iron are pulses, legumes, soya bean and cow bean(20%), Fruits rich in vitamin C is Orange, Apple & butter fruit(37.75%),Vegetables rich in vitamin C is Tomato(45.5%) & by Proper intake of iron rich diet anemia can be prevented (46.5%)they had inadequate knowledge.

TABLE-21: AREA WISE KNOWLEDGE SCORE ON MANAGEMENT OF NUTRITIONAL ANEMIA

N=400

Sl. No	Area wise Knowledge	No. items	Range	Mean	Mean %	SD
1	Anatomy & Physiology of blood	3	**1-3**	**1.70**	**56.6**	**0.53**
2	Signs and symptoms of anemia	6	**1-4**	**2.48**	**41.3**	**0.71**
3	Management of nutritional anemia	8	1-6	3.35	41.8	0.77
	Total	**17**	**1-9**	**7.52**	**44.2**	**1.14**

The above table depicts area wise Mean % Knowledge-Scores on management of nutritional *Anemia* . in which three subareas were there. In the area of anatomy& physiology **of** Blood highest mean percentage (56.6%) was seen & in the area of Signs and symptoms of nutritional anemia the lowest (41.3%) mean percentage was seen. Remaining one area i.e. management of nutritional anemia the mean percentage was 41.8.

TABLE-22: DISTRIBUTION OVER ALL KNOWLEDGE SCORES OF ADOLESCENT GIRLS

N=400

Sl. No.	Knowledge score	Frequency	Percentage
1	Below 50%	323	80.75
2	50 – 75%	77	19.25
3	Above 75%	-	-
	Total	**400**	**100**

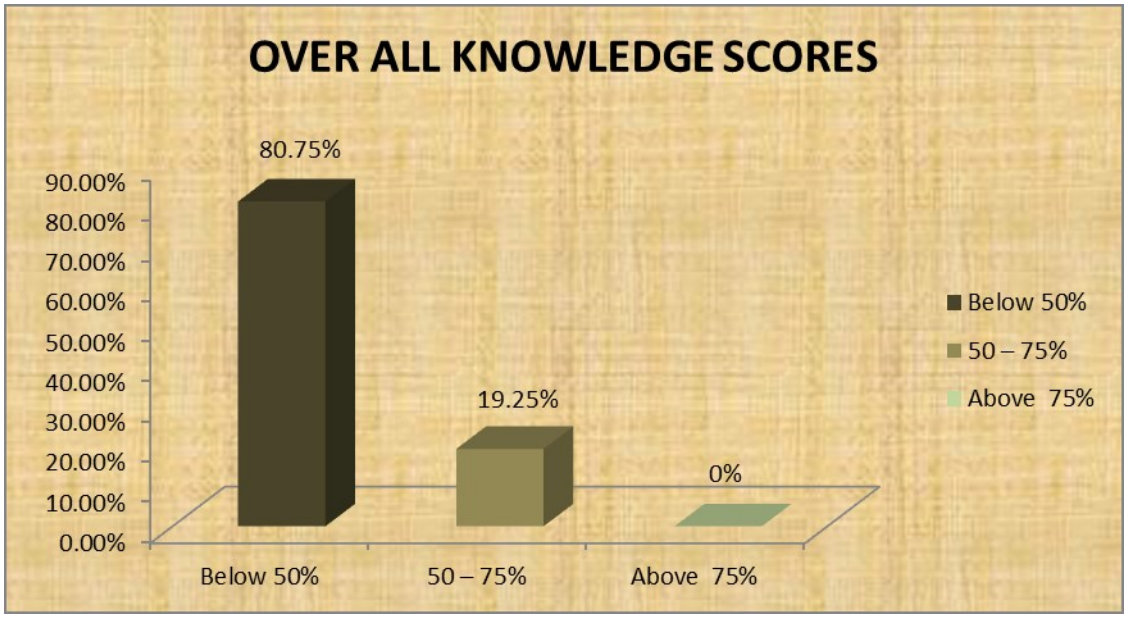


Fig-12 Bar diagram showing adolescent girls over all knowledge scores

Table-22 and graph show **that** Over-all knowledge-scores of adolescent girls on management of nutritional anemia . all most (80.75%) adolescent girls had inadequate knowledge, 19.25% of adolescent girls had insufficient Knowledge & no-body has had satisfactory Knowledge.

According to the WHO guidelines, BMI calculations used to assess the nutritional status of adolescents. It is calculated by using the formula i.e. BMI= Weight in Kg/Height in meter square. If the BMI value below 16.5 to 18.5, a person is termed as underweight, 18.5-24.5, it indicates normal weight for height and more than 25-30 is termed as overweight[62] and presented in table-14.

TABLE-: 23 BASED ON BMI DISTRIBUTION OF ADOLESCENT GIRLS

N=400

BMI Categories	14 years		15years		16years		Total num of students	%
	f	%	f	%	f	%	f	%
<18.5 Under weight	77	60.63	86	76.11	95	59.37	258	64.5
18.5-24.5 Normal	50	39.37	27	23.89	65	40.63	142	35.5
25& above Over weight	-	-	-		-	-	-	-
Total	127	100	113	100	160	100	400	100

Table:23 displays, That majority 14years(60.63%,), 15 year(76.11%) and 16years(***59.3 %)*** adolescent girls of them were underweight. whereas 39.37%, 23.89% and 40.63% of them were with normal Body mass index and none of them were with overweight

As per WHO Classification, anemia [63] is classified as follows:

Hb > 11 gm/dl – normal

Hb: 9-11gm/dl - mild anemia ,

Hb 7- 9- moderate anemia and

Hb < 7 severe anemia

Based on the above Hb percentage of adolescent girls and same discussed in Table -15.

TABLE-24 DISTRIBUTION OF ADOLESCENT GIRLS BASED ON THEIR HEMOGLOBIN LEVEL

N=400

Hb%	14 years		15years		16years		Total num of students	%
	f	%	f	%	f	%	f	%
Normal	110	86.63	87	76.99	143	89.37	340	85
Mild anemia	16	12.59	23	20.35	16	10	55	13.75
Moderate anemia	01	0.78	03	2.66	01	0.63	05	1.25
Severe anemia	-	-	-	-	-			
Total	127	100	113	100	160	100	400	100

Table:_ 24 reveals that, majority(86.63%,76.99 and 89.37%) *Of* adolescent girls were having normal Hemoglobin % in the groups of (14years, 15 year and 16years) whereas 12.59%, 20.35% and 10% of them were having mild anemia , 0.78%, 2.66% and 0.63% of them were having moderate anemia and adolescent girls with severe anemia was not identified.

TABLE-25 OVERALL KNOWLEDGE SCORE AND BIOPHYSIOLOGICAL PARAMETERS

N=400

Sl. No.	**Knowledge score and Biophysiological parameter**	Mean	SD
1	Management of Menstrual disorders and Nutritional anemia	24.24	2.98
2	BMI	17.39	2.58
3	Hb%	12.94	8.55

Table:25 displays that overall pretest Mean knowledge-score on management of menstrual Disorder and Nutritional Anemia Among adolescentgirls was 24.24 with S.D of 2.98, in BMI it was 17.39 with S.D 2.58 and in hemoglobin it was 12.9 with S.D 8.55.

SECTION-III

SUCCESS OF DESIGNATED TEACHING ACTIVITY ON LEVEL OF *KNOWLEDGE* AND BIOPHYSIOLOGICAL PARAMETER

This division deal with the **second objective** of the study that ***Effectiveness of PTP*** **on Level of Knowledge and Biophysiological Parameter of adolescentgirls on management of menstrual disorder & nutritional anemia by comparing before and after intervention scores.**

Knowledge level of adolescent girls was assessed followed by ***PTP*** to distinguish difference between the Pre & post test knowledge score and biophysiological parameters.

The results were presented from table 26 to 32.

TABLE-26: AREA-WISE ENHANCEMENT OF KNOWLEDEG SCORE ON MANAGEMENT OF MENSTRUAL DISORDERS

N=400

Sl. no	Area wise knowledge	Pre test		Post test		t- value	P value 0.05	Inference
		Mean	SD	Mean	SD			
1	Anatomy & physiology of female Reproductive System	3.89	1.00	5.47	0.60	28.55	0.00**	SS
2	Premenstrual syndrome.	1.83	0.70	2.52	0.58	15.63	0.21**	SS
3	Dysmenorrheal	1.78	0.56	2.50	0.51	18.85	0.85**	SS

4	Prolonged periods	1.49	0.52	2.05	0.20	19.29	0.39**	SS
5	Frequent & delayed periods	2.71	0.78	3.57	0.51	19.03	0.04**	SS
6	Management menstrual disorders	4.56	0.89	9.28	0.87	77.009	0.38**	SS
Overall		16.26	1.96	25.35	1.481	76.518	0.15**	SS

Table_26 shows that, area-wise knowledge scores on management of menstrual disorde. The mean pretest knowledgescores on anatomy & physiology of female reproductive system was 3.89 ± 1.004, in the same area mean post test knowledge scores was 5.47 ± 0.60. The obtained "t" rate was 28.55 > the table value. This shows a significant difference between pretest and posttest knowledge-scores.

With regard to PMS the mean pre-test knowledge-scores is 1.83 ± 0.70, while the average post-test knowledge score was 2.52 with SD of 0.58. The obtained "t" value was 15.63 which represent the significant diversity in post-test knowledge scores when compare to pretest scores.

The pretest knowledgescores on Dysmenorrhea was 1.78 with SD of 0.56, and the mean knowledge scores of posttest is "2.50 with sd 0.51". The calculated "t" price was 18.85 that indicates, significant difference b/w pre & post test knowledge scores.

The average pre_test knowledge-scores on prolonged periods was 1.49 with SD of 0.52, & the posttest mean knowledge_score was 2.05 with SD of 0.20. The obtain "t" value was 19.29 this show there is "significant difference" in score of knowledge in pre & post test.

Mean pretest knowledgescores on frequent periods were 2.71 with SD of 0.78, whereas the mean score knowledge in post test is 3.57 with SD of 0.51. The obtained "t" value was 19.03 which indicate large difference b/w pre & post test knowledge score.

The mean knowledge scores in pre test on management of menstrual disorders was 4.56 with SD of 0.89, but the mean knowledge scores in post test was 9.28 with SD of 0.87 The obtained "t" value was 77.00 which indicating that there is major difference b/w pretest & post test knowledge score.

Allover pretest mean knowledge_scores was 16.26 ± 1.96 and the post test mean knowledgescores was 25.35 ±1.48. The obtained paired "t" test value was 76.51 which shows statistical significance at $p<0.05$.

TABLE: 26(a): DIVISION OF PRE AND POST TEST ITEM WISE KNOWLEDGE SCORE ON FEMALE REPRODUCTIVE SYSTEM

N=400

Sl No	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Female reproductive system composed of uterus, fallopian tube, ovary & vagina	294	**73.5**	**337**	**84.25**
2	Ovulation meaning release of female egg	292	73	309	77.25
3	Menstruation means monthly bleeding	285	71.25	**298**	**74.5**
4	Usually monthly bleeding occurs once in 28 days	220	55	310	75.25
5	Usually monthly bleeding lasts for 3-5 days	197	49.5	318	79.5
6	Amount of blood loss during monthly bleeding is 30-40ml	135	**33.75**	308	77
7	First menstrual cycle is known as Menarche	137	34.25	306	76.5

The above table depicts itemwise pre & post test knowledgescores of "adolescent-girls" on reproductive system. There were 7 items. The highest knowledge score pre test(73**.5**%)post test (84.25) observed in the item of "**Female reproductive systemconsists uterus, fallopian tube, ovary & vagina"** and the lowest (**33.75**) was seen in the item on **Amount of bleed during monthly bleeding is 30-40ml** in pretest where as in post test (**74.5%)**it was on **menstruation means monthly bleeding.**

Further by observation the allover knowledgescore was increased in all items with regard to reproductive system in post test when compared to pretest.

TABLE:26(b):ITEM WISE DISTRIBUTION OF PRE AND POST TEST KNOWLEDGE SCORES ON PREMENSTRUAL DISORDERS

N=400

Sl.No	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Premenstrual syndrome means discomfort occurring before menstrual cycle	192	48	240	**60**
2	Premenstrual syndrome is characterized by Irritability, low mood, Anxiety, lassitude, Breast tenderness & bloating	163	40.75	269	67.25
3	The most important part of premenstrual syndrome management is eating balanced diet	**125**	**31.25**	286	**71.5**
4	Diet which need to avoid during premenstrual period is avoiding to take more coffee & tea	**202**	**50.5**	260	65.5

The above table depicts pre and post test item wise knowledge scores of adolescent girls on premenstrual disorders. There were 4 items. The highest knowledge score fifty point five percent observed on item **Diet which need to avoid during premenstrual period is avoiding to take more coffee & tea** in post test & pretest it (71.5%) was seen in the item of **an important phase of (premenstrual syndrome) PMS management is eating balanced diet** and the lowest (31.25%) was seen in the item on **The most important part of PMS management is eating balanced diet** in pretest where as in post test 60% in **PMSmeans discomfort occurring before menstrual cycle.**

Further observed that overallknowledgescore was increased in individual questions with about to premenstrual_syndrome in posttest when compared to pretest.

TABLE: 26(c) ITEM WISE DISTRIBUTION OF PRE AND POST TEST KNOWLEDGE SCORES ON DYSMENORRHEA

N=400

Sl.No.	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Pain in abdomen at the time of menstruation is known as Menstrual cramp	**214**	**53.5**	246	61.5
2	The common symptom of dysmenorrhea is Pain in the abdomen, lower back, around the hips & inner thigh, abdominal bloating & breast sensitivity	134	33.5	285	71.25
3	Dysmenorrhea can be reduced by intake of warm fluids , Practice of yoga, exercise and wholesome diet	**132**	**33**	307	**76.75**
4	Dysmenorrhea can be treated with mild analgesic, hot application and massage	192	48	199	**49.5**

The above table depicts pre & post test item wise scores of knowledge on Dysmenorrhea. There were 4 items. In pretest highest knowledgescore (53.5%) was seen in the item of **Menstrual cramp means** *Pain in abdomen* **during menstruation** and in post test it (76.75%) was seen in the item of **Dysmenorrhea can be reduced by intake of warm fluids , Practice of yoga, exercise and wholesome diet** and the lowest (33%) was seen in the item on **Dysmenorrhea can be reduced by intake of warm fluids , doing yoga, exercise and wholesome diet**in pretest where as in post test (49.5%)it was on **Dysmenorrhea can be treated with mild analgesic, hot application and massage.**

Additional it was seen overall*knowledgescore* was increased in every items with-regard to pain in abdomen in post test when compared to pretest.

TABLE: 26(d) DISTRIBUTION OF PRE AND POST TESTKNOWLEDGE SCORES ON PROLONGED PERIODS(item-wise)

N=400

Sl No	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Prolonged periods means Blood loss during monthly cycle more than 80ml	222	55.5	243	**60.75**
2	One of the symptom of heavy periods Passing large blood clot in each monthly cycle	**150**	**37.5**	281	70.25
3	One of the common side effect of prolonged periods Iron deficiency anemia	**225**	**56.25**	294	**73.5**

The above table depicts adolescent girls itemwise knowledgescores on prolonged periodin both pre and post test. In this area 3 items were there. The highest proficiency score (56.25%) was seen in the item of **most commonest side-effect in heavy bleeding is anemia**

due to loss of Iron in pretest and post test(73.5%). The littlest 37.5% presented in on item **one of the indicator of heavy periods passing large blood clot in each monthly cycle** in pretest, and in posttest 60.75%it was on **prolonged period's means Blood loss during monthly cycle more than 80ml.**

Later it was observed the overallknowledgescore was increased in every item about "lengthy periods" in post test when compared to pretest.

TABLE-26(e): DISTRIBUTION OFPRE AND POST TEST KNOWLEDGE SCORES ON DELAYED AND FREQUENT PERIODS (ITEM WISE)

N=400

Sl No	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Monthly bleeding occurs at an interval of less than 21 days called as frequent period	**273**	**68.25**	278	69.5
2	Common cause for frequent period is Obesity & BMI	234	58.5	283	70.75
3	To control frequent periods, Lifestyle changes, Oral contraceptive pills and Over the counter drugs are not advised	**162**	**40.5**	294	73.5
4	Monthly bleeding occurs for more than 35 days called as delayed period	193	48.25	304	**76**
5	The reasons for delayed periods is weight gain, anemia and hormonal imbalance	241	60.25	267	**66.75**

The above table depicts pre and post test item wise scores of knowledge on elayed &frequent periods. There were 5 items. The highest knowledge score (68.25%) was seen in the item of **Monthly bleeding occurs at an gap of ,< 21 days called as frequent period**

before intervention and after intervention (76%) identified in the item of**Monthly bleeding occurs for more than 35 days called as delayed period**. The lowest fourty point five percent was noticed in the item on **To control frequent periods, , Oral contraceptive pills, Lifestyle changes and over the counter drugs are not advised**before the test where as in post test 67 %detected **The reasons for delayed periods is weight gain, anemia and hormonal imbalance.**

next observed that Overallknowledgescore was increased in each item on delayed and frequent cycles in after the test when compared to pretest.

TABLE-26(f): PRE AND POSTTEST KNOWLEDGE SCORES ON MANAGEMENT OF MENSTRUAL DISORDERS(ITEM WISE)

N=400

Sl. No.	**Items**	**Correct response**			
		Pre test		**Post test**	
		No	**%**	**No**	**%**
1	Vitamin which helps in reducing menstrual pain is VitaminB6	**268**	**67**	293	**73.25**
2	The fruit rich in Vit B6 is Banana	266	66.5	314	78.5
3	The spicy product which helps in regulating menstrual cycle is Sesame seed	233	58.25	305	76.25
4	The plant which helps in maintaining normal menstrual cycle is Alovera	211	52.75	295	73.75
5	The herb which is helpful in balancing hormones during monthly bleeding is Turmeric	**185**	**46.25**	303	75.75

6	The seed which helps in treating oligomenorrhea is Coriander seeds	198	49.5	308	77
7	Cramping pain & premenstrual syndrome can be reduced by using Fennel (jeera)	214	53.5	326	81.5
8	The leaves which helps in regulating regular menstrual cycle is Mint leaves	248	62	341	**85.25**
9	The tuber which helps to boost proper hormone function during monthly bleeding is Carrot	200	50	312	78
10	The flower which helps in regulating estrogens and progesterone for regular periods is Hibiscus	193	48.5	309	77.25
11	Menstrual cramps trigger due to deficiency of Potassium& Calcium	241	60.25	323	80.75
12	Skimmed milk is rich in Calcium	192	48	296	74

The above table depicts pre and post test knowledge scores (itemwise) of "adolescent girls" on managing of menstrual disorders. There were 12 items. The highest knowledge gain 67% recognized in the item of **Vitamin which helps in reducing menstrual pain is VitaminB6** in before and after the test (85.25%) viewed in the item of**The leaves which helps in controlling normal monthly psriods is Mint leaves.** The lowest (46.25%) looks in the item on **The herb which is helpful in balancing hormones during monthly bleeding is Turmeric** in *pre-test* where as in *post-test* (73.25%)it was on **Vitamin which helps in reducing menstrual pain is VitaminB6**.

Supplementary to it observed that overall wisdom- score was increased in all items related to managing of menstrual disorder in post_test in relation to pretest

TABLE-27: PRE AND POST TEST AREA WISE KNOWLEDEG SCORE ON MANAGEMENT OF NUTRITIONAL ANEMIA

N=400

Sl.No.	Area wise knowledge	Pre test		Post test		t-value	P value 0.05	Inference
		Mean	SD	Mean	SD			
1	Anatomy & physiology of blood	1.70	0.53	2.34	0.47	18.65	.00	SS
2	Signs and symptoms of nutritional anemia	2.48	0.71	4.59	0.54	49.07	.00	SS
3	Management of nutritional anemia	3.35	0.77	6.33	0.63	57.82	.00	SS
Overall		**7.52**	**1.14**	**13.25**	**1.01**	**75.41**	**.00**	**SS**

Table: 27 debit that the pre-test mean *knowledgescores* on physiology of blood was 1.70 ± 0.53 whereas the posttest mean knowledge scores was 2.34 ± 047. The obtained paired "t" test value was 18.65 this indicate t there is major disparity b/w pretest and post test knowledge score.

With regard to signs & symptoms of "nutritional anemia", the pre test mean knowledge scores on was 2.48 with standard deviation 0.71 as the post test mean knowledge score was (4.59) SD of 0.54. The obtain "paired "t" test" value was 49.07 show, there is considerable difference in before and after the intervention in improving the knowledge score.

Pretest mean knowledge scores on management of nutritional anemia was 3.35 with SD of ***0.77***, and the mean posttest knowledge scores was 6.33 with SD of 0.63. The obtained paired "t" test value was 57.82 this prove "significant variation" among pre & posttest knowledge rank..

The allover mean pre-test knowledge score is 7.52 with SD of 1.14 whereas in post test mean knowledge scores was 13.25 with SD of 1.01. The obtained "t" test value was 75.41 which shows statistical significance at $p<0.05$.

The overall the mean pre-test knowledge-score on managing of menstrual disorder and "nutritional anemia" was 24.24 with SD of 2.98 and mean post test score was 38.09 with SD of 2.37. the obtained t- test value was 72.44 which shows statistical significance at $p<0.05$.

There was numerical extensive difference in level of knowledge after implementation of planned teaching programm therefore rejectednull hypothesis.

TABLE-27(a): DISTRIBUTION OF PRE AND POST TEST KNOWLEDGE SCORES ON ANATOMY AND PHYSIOLOGY OF BLOOD(ITEM WISE)

N=400

Sl.No.	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Blood constitute of RBC WBC & Platlets	237	59.25	323	**80.75**
2	In RBCS the product which carries oxygen is Hemoglobin	198	**49.5**	299	**74.75**
3	Normal range of hemoglobin in adolescent girls is12 to 14 g per dl	245	**61.25**	313	78.25

The above table depicts about item wise knowledge scores on anatomy and physiology of blood in mutually in pre and post test among adolescent girls. There were 03

items. The highest 61.25% knowledge score viewed in the item of **Normal range of hemoglobin in females is12 to 14 g per dl** in B_4 and After (74.75%) noticed in the item of**In RBCS the product which carries oxygen is Hemoglobin**. The lowest 74.75% &49.5% detected the item on **In RBCS the product which carries oxygen is Hemoglobin** in both the time..

Further the overallknowledge-score was increased in all items with relation to anatomy and physiology of blood in post test when compared to pretest.

TABLE- 27(b) : DISTRIBUTION OF PRE AND POST TEST SCORES ON SIGNS AND SYMPTOMS OF ANEMIA

N=400

Sl.No.	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	Anemia means decreased level of RBC	**228**	**57**	334	**83.5**
2	Most common type of anemia among adolescent girls is Iron deficiency anemia	205	52.25	304	76
3	Iron deficiency anemia means decreased amount of vitamin B_{12} in the blood	104	26	297	74.25
4	The main cause of iron deficiency anemia in adolescent girls is Blood loss due to monthly bleeding	144	36	291	**72.75**
5	Main symptoms of iron deficiency anemia is Curvature of nails	129	**32.25**	301	75.25
6	Vitamin which helps in iron absorption is Vitamin C	182	45.5	309	77.25

The above table 27(b) depicts Pretest and Post test item wise knowledge ranks of teenage girls on signs and symptoms of anemia. There were 06 items. The > score of knowledge was seen in the item of **Anemia means decreased intensity of RBC** in pretest (57%) & in post test (83.5%). The slightest 32.25% observed in the item on **important symptom of "Fa" deficiency anemia is Curvature of nail**where as in post test it (72.75%) was seen in item **The major etiology of "Fe" deficiency anemia in adolescent girls is monthly bleeding**.

Next it was observed that totalknowledge score was increased in all items on "Anemia signs and symptoms" in posttest when compared to pretest.

TABLE- 27(c) : CIRCULATION OF PRE AND POST TEST KNOWLEDGE SCORE ON MANAGEMENT OF ANEMIA

N=400

SlNo	Items	Correct response			
		Pre test		Post test	
		No	%	No	%
1	In adolescent girls anemia can be prevented by taking food rich in iron, vitamin B_{12} and Vitamin C	214	53.5	325	**81.25**
2	Vegetables rich in iron content expect drumsticks Cabbage Black Beans	219	**54.75**	314	78.5
3	Green leafs rich in iron is Spinach	189	47.5	311	**77.75**
4	Rich in iron are pulses, legumes, soya bean and cow bean	104	26	315	78.75
5	Rich in iron among milk and milk product is cheese	96	**24**	313	78.25
6	Fruits rich in vitamin C is Orange, Apple & butter fruit	151	37.75	317	79.25
7	Vegetables rich in vitamin C is Tomato	182	45.5	321	80.25
8	Anemia can also be prevented by Proper intake of iron rich diet	186	46.5	318	79.5

The above table displays about adolescent girls pre test and posttest item wise knowledge scores management of anemia,. There were 08 items. The > knowledge score was seen in the item of **Vegetables rich in iron content expect drumsticks, Cabbage, BlackBeans** in pretest(54.75%). Whereas in posttest (81.25%) which was seen in the item on **In adolescent girls anemia can be prevented by taking food rich in iron, vitamin B_{12} and Vitamin C.** The (least 24% was noticed in item on **Rich in iron among milk and milk product is cheese** in pre test and 77.75% observed on item**Green leafs rich in iron is Spinach in post test.**.

Later it was observed that total knowledge gain was increased in all the items with regard to management of **anemia** in post test when compared to pretest.

The II-secondary Aim was to estimate the efficacy of PTP on "Bio-physiological Parameter" of Adolescent Girls by comparing Pre & Post test observational values and presented from table-19-20.

TABLE-28: DISTRIBUTION OF PRE AND POST TEST BMI SCORES

N=400

BMI	Pre test						Post test					
	14 Yrs		15 yrs		16yrs		14 Yrs		15 yrs		16yrs	
	f	%	f	%	f	%	f	%	f	%	f	%
<18.5 **Under weight**	77	60.63	86	76.11	95	59.37	76	59.84	82	72.56	92	57.5
18.5-24.5 **Normal**	50	39.37	27	23.89	65	40.63	51	40.16	31	27.43	68	42.5
25& above **Over weight**	-	-	-	-	-	-	-	-	-	-	-	-
Total	**127**	**100**	**113**	**100**	**160**	**100**	**127**	**100**	**113**	**100**	**160**	**100**

Table28:- displays that majority (60.63%, 76.11% and 59.3%) of adolescent girls shunted(under weight) in pre test BMI scores were at the age of 14 years, 15 years and 16 years respectively. whereas 39.37%, 23.89% & 40.63% samples weight is normal at the age of 14 years,15 years and 16 years respectively. With regarding to the post test majority(59.84%, 72.56%and 57.5%) of adolescent girls were underweight in all age groups(14years, 15 year and 16years) where as 40.16%, 27.43% and 42.5% are having normal BMI & none of them were with overweight in both pre and post test. This findings

revealed that there is not much variations in Body Mass Index(BMI) only 2% of teenage girls shifted from under-weight to normal.

TABLE-29: DISTRIBUTION OF PRE AND POST TEST HEMOGLOBIN LEAVE

N=400

Hb%	Pre test						Post test					
	14 Yrs		15 yrs		16yrs		14 Yrs		15 yrs		16yrs	
	F	%	f	%	f	%	f	%	f	%	f	%
Normal	110	86.63	87	76.99	143	89.37	103	81.10	87	76.99	141	88.12
Mild anemia	16	12.59	23	20.35	16	10	19	14.59	20	17.69	15	9.37
Moderate anemia	01	0.78	03	2.66	01	0.63	05	3.93	06	4.72	04	2.5
Sever	-	-	-	-	-	-	-	-	-	-	-	-
Total	**127**	**100**	**113**	**100**	**160**	**100**	**127**	**100**	**113**	**100**	**160**	**100**

Table:-29 presents about the pre and Post test hemoglobin levels which disclosed that majority (86.63%, 76.99% & 89.37%) and(81.10%,76.99% and 88.12%)of young girls are having normal Hb% in all(14years, 15 year and 16years) age groups whereas 12.59%, 20.35% and ten percent in pretest & post test 14.59%, 17.69%and 9.37% with mild anemia, 0.78%, 2.66 % and 0.63% in pretest & post test 3.93%, 4.72& 2.5% adolescent girls are with moderate anemia & no one recognized with severe anemia. This findings shows that not much difference with regard to Hb% except few (2.5%) young girls shifted from under-weight to normal.

TABLE -:30 EFFECTIVENESS OF PTP ON KNOWLEDGE AND BIOPHYSIOLOGICAL PARAMETERS

N=400

Sl.No	Variables	Pre test		Post test		t-value	P value	Inference
		Mean	SD	Mean	SD			
1	Knowledge scores on management of menstrual disorders and nutritional anemia.	24.24	2.98	38.09	2.37	72.44	0.00	SS
2	BMI	17.39	2.58	17.47	2.53	**2**.48	.13	SS
3	Hb%	12.94	8.55	11.36	1.17	-3.63	.00	NS

The above table reveals that pretest mean knowledgescore was 24.24 with SD 2.98 & the posttest score was 38.09 with SD of 2.37. The paired t-test score is 72.44 which illustrate that there is major divergence in both pre & posttest results. The pretest-mean BMI values of "adolescent girls" was 17.39 with SD of 4.34 whereas the average post-test scores was 17.34 with SD of 4.36. The paired t-test reading was 2.48 > (1.96) indicates significant difference in both pre-test& post- test scores and the mean pre test score of Hemoglobin % in "adolescent girls" was 12.94 ± 8.55 and the mean post-test score was 11.36 with SD of 1.17.The paired t-test value is =3.63.< (1.96) indicating that there no is considerable difference b/w pre and post test scores.

III☺primary objective was to **establish the Association between Level of Knowledge among Adolescent Girls on Management of Menstrual Disorders & Nutritional Anemia with selected Sociodemographic capricious after performance of PTP** and presented in table-20-23.

SECTION-IV:

ASSOCIATION OF KNOWLEDGE SCORS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

This section deals with **third objective** that was "To find out the association between the knowledge scores on management of menstrual disorders and nutritional anemias with selected socio-demographic variables after implementation of PTP" .and Association b/w knowledge score and sociodemographic variables was determined by the " Null hypothesis" Variable, after implementation of PTP. To know the association, the investigator used chi-square test and the same presented in table 31-34.

TABLE;– 31: ASSOCIATION OF KNOWLEDGE SCORES ON MANAGEMENT OF MENSTRUAL DISORDERS

N=400

Sl .NO.	Variables	Post test Knowledge		χ^2	Df	P value 0.05	Inference
		Below Median 25	Above Median = &25				
1	**Age group** 13-14 yrs 14-15yrs 15-16yrs	42 46 44	85 67 116	5.22	2	0.07	NS
2	**Type of family** Nuclear Joint	80 52	160 108	0.03	1	0.86	NS
3	**Occupation of father** Former Daily-wages Private employee Government employee	86 31 08 07	195 57 08 08	4.28	3	0.23	NS
4	**Education of mother** >SSLC <SSLC	115 17	249 19	3.61	1	0.05	NS
5	**Occupation of mother** Former & daily-wages House wife Private employee Government employee	50 69 09 04	170 83 09 06	**21.55**	3	0.00	SS

6	**Type of food** Vegetarian Mixed	20 112	107 161	**25.04**	1	0.00	SS
7	**Source of information** Family & friends Teachers Mass media	52 26 55	181 68 18	**72.14**	2	0.00	SS

NOTE: Table value at df(1)=3.84,df(2)=5.99 and df (3)=7.82

SS=statistically significant, **NS**= Not statistically significant

Table-31 shows the association of knowledge on management of menstrual disorders in association with selected socio-demographic data after PTP. There were seven selected variables which was tested with the level of knowledge.

With regard to age, there were three groups, 14 years, 15years and 16years. The obtained χ^2=5,22 < 5.99 at P= 0.05. Indicates there was "no association" b/w knowledge score with age thus the null hypotheses was accepted.

With regard to type of family there were two groups, nuclear and joint family. The obtained chi-square value χ^2 = 0.03< (3.84) at level of 0.05. Instead there was "no significant association" b/w score on knowledge r/t type of family. Therefore null hypothesis was accepted.

Interns job of the father, there were four groups, Former & daily wages, Private employee and Government employee. The obtained chi-square value is 4.28 < 7.82 at 0.05 point. This show "no significant association" among knowledgescore of adolescent girls with employment of father. Hence null hypotheses was accepted

Academic status of the mother, there were two groups, below SSLC and above SSLC. The obtained χ^2 = 3.61 < 3.84 at level of 0.05. Proves "no association" between scores of knowledge with scholastic grade of mother Hence null hypotheses was accepted.

With regard to job-related position of the mother, there were four groups Former & daily wages, House wife, Private employee Government employee. The obtained (chi-square

value)χ^2=21.55 > (7.82) at 0.05 point. Signifying there is a "**significant association"** between knowledgescore with work-related status of mother Hence null hypotheses was rejected.

In relation to kind of food there were two groups, vegetarian and mixed diet The obtained chi-square value = 25.04 > 3.84 at 0.05 level. This shows the significant association between knowledge scores and kind of foodstuff .for this reason rejected null hypotheses.

With regard to resource of information, three groups were there, i.e. family and friends, teachers and mass media. The obtained chi-square value was 72.14>5.99 at 0.05 level. Indicates "Significant association" with knowledgescore and resource of data. thus rejected null hypotheses .

TABLE – 32: ASSOCIATION OF KNOWLEDGE SCORES ON NUTRITIONAL ANEMIA

N=400

Sl .NO.	Variables	Post test Knowledge		χ^2	df	P value 0.05	Inference
		Below Median <13	Above Median = &13				
1	**Age group** 13-14 yrs 14-15yrs 15-16yrs	28 32 30	99 81 130	3.50	2	0.17	NS
2	**Type of family** Nuclear Joint	58 32	182 128	0.95	1	0.32	NS
3	**Occupation of father** Former Daily wages Private employee Government employee	62 23 06 07	219 65 10 08	6.48	3	0.09	NS
4	**Education of mother** >SSLC <SSLC	83 21	281 15	21.5	1	0.00	SS
5	**Occupation of mother** Agriculture &daily wages	49 47 07	171 105 11	18.47	2	0.00	SS

	House wife Private employee Government Employee	05	05				
6	**Type of food** Vegetarian Mixed	32 58	95 215	0.77	1	0.37	NS
7	**Source of information** Family & friends Teachers Mass media	50 30 15	182 64 59	6.55	2	0.03	SS

Table:-32 explain about the association of knowledge score on management of nutritional Anemia with certain population based data subsequent execution of PTP. There were seven certain characteristics tested with the level of knowledge.

With regard to age, there were three groups, 14 years, 15years and 16years. The chi-square value was 3.50 < table value 5.99 at 0.05 levels. reveal "No considerable association" allying knowledge score with maturity . as a result accepted the null hypothesis was.

With regard to nature of family two groups were there i. e. nuclear and joint-family. The obtained chi-square value (0.95)< (3.84) table value at 0.05 levels. Indicating "*no significant association*" between knowledge score with type of family. consequently null hypothesis was accepted.

With regard to occupation-of-father, four groups were there, i.e. Former/ Daily wage worker, Private employee and Government employee. The obtained chi-square value was 6.48 less than 7.82 at 0.05 levels. This reveals that "no significant association" in score of knowledge of participants with employment of parent. that's why null hypotheses was accepted

In relation to qualification of mother, there were two groups, below SSLC and above SSLC. The obtained chi-square value 21.5 > 3.84 at level of 0.05. which show that "significant association" b/w scores of knowledge with qualification of parent. and so a null hypothesis was rejected.

With regard to occupational status of mother, there were four groups Former & daily wages homemaker, Private employee Government employee. The obtained $\chi^2 = 18.47 < 7.82$ at 0.05. Result show “considerable association” between occupational status of mother with knowledge score.. Therefore accepted null hypothesis.

With regard to type of food two groups were there, i.e. mixed-diet & vegetarian.The obtained chi-square value was 0.77 <3.84 at 0.05 Level. Which representing no significant relation between type of food and scores of knowledge. that's why null hypotheses was accepted.

In relation to resource of information, three groups were therei.e., family & friends, teachers and mass media. The obtained chi-square value was 6.55 > 5.99 at 0.05 level. Which shows significant relationship between source of information with knowledge. Therefore null hypothesis was rejected.

SECTION-V:

ASSOCIATION OF BIOPHYSIOLOGICAL PARAMETER WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES

This subdivision explains about Secondary **third objective** that was "to observe the association stuck between the Biophysiological parameter adolescent girls with their selected Socio-demographic characteristics following execution of planned-teaching programme "and the Null hypothesis was determine the alliance between biophysiological parameter with selected Socio- demographic Variable after implementation of PTP. To know the association the principle-investigator used χ^2 (chi-square) test and the findings were accessible in table 26-28.

TABLE:- 33 :ASSOCIATION OF BMI VALUE WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES OF ADOLESCENT GIRLS.

N=400

Sl .NO.	Variables	BMI		χ^2	df	P value 0.05	Inference
		Below median <17.3	Above median = &>17.3				
1	**Age group** 13-14 yrs 14-15yrs 15-16yrs	62 56 56	65 57 104	7.39	2	0.02	NS
2	**Type of family** Nuclear Joint	116 62	124 98	3.57	1	0.05	NS
3	**Occupation of father** Former Daily wages Private employee Government employee	117 43 19 15	151 41 10 04	13.17	3	0.00	NS
4	**Education of mother** >SSLC <SSLC	159 13	205 23	0.76	1	0.38	NS
5	**Occupation of mother** Former&Daily wages House wife Private employee	102 75 06 05	118 77 12 05	1.75	3	0.62	NS

	Govt Employee						
6	**Type of food** Vegetarian Mixed	89 38	139 134	12.98	1	0.00	SS
7	**Source of information** Family& friends Teachers Mass media	89 25 15	144 69 58	9.94	2	0.01	SS

NOTE: Table value at df(1)=3.84,df(2)=5.99 and df (3)=7.82

SS=Statistically significant ,NS= Not statistically significant

The above table-26 Debit that the relationship of BMI with selected socio-demographic variables after carrying out of planned-teaching programme. There were seven selected variables were tested with level of knowledge.

Regarding the age of adolescent girls, there were three groups, 14 years, 15years and 16years. The obtained $\chi^2 = 7.39 <$ table value i.e.5.99 at 0.05 Level. Proves that insignificant association between BMI with age at 0.05 level. Hence the null hypothesis was accepted.

With regard to nature of family unit there were two groups, nuclear and Joint-family. The obtained $\chi^2 = 3.57 <$ table value 3.84 at 0.05 Level. representing no significant involvement between BMI with nature of family. Hence null hypothesis was accepted.

With regard to occupation of father, there were four groups, Former/ daily wages, Private employee and Government employee. The obtained chi-square value was 13.17 > 7.82 at 0.05 level. which indicating significant association between occupation of father with BMI of adolescent-girls. Hence null hypotheses was accepted.

With regard to educational status of mother, there were two groups, below SSLC and above SSLC. The obtained $\chi^{2=} 0.76 <$ table value 3.84 at 0.05 level. Demonstrating no significant association between education statuses of mother with BMI .Hence null hypotheses was accepted.

With view to working-status of mother, there were four groups Former / daily wages House wife Private employee and Government employee The obtained chi-square value was 1.75 < 7.82 at 0.05 level. This signifies no significant association between occupational status of mother & BMI. Hence null hypotheses was accepted

With regard to Type of food there were two groups, vegetarian and mixed-diet The obtained χ^2=12.98 <3.84 at 0.05 level. indicating there is significant association between type of food and BMI. Hence null hypotheses was rejected

With regard to resource of information, in that four groups were there, family members, friends, teachers and mass media. The obtained chi-square value was 9.72 >5.99 at 0.05 level. which signifies relationship between resource of information with BMI. therefore null-hypothesis was discarded

TABLE – 34: ASSOCIATION OF HEMOGLOBIN WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES

N=400

Sl .NO.	Variables	Post test HB		χ^2	df	P value	Inference
		Below Median <11.2	Above Median = &>11.2				
1	**Age group** 13-14 yrs 14-15yrs 15-16yrs	63 42 75	64 71 85	4.11	2	0.12	NS
2	**Type of family** Nuclear Joint	95 65	145 95	0.04	1	0.83	NS
3	**Occupation of father** Former Daily wages Private employee Government employee	127 40 08 05	154 48 08 10	0.99	3	0.80	NS
4	**Education of mother**	165	199	0.01	1	0.91	NS

	>SSLC <SSLC	16	20				
5	**Occupation of mother** Former/Daily wages House wife Private employee Govt Employee	95 75 05 04	125 77 13 05	3.47	3	0.32	NS
6	**Type of food** Vegetarian Mixed	85 40	87 188	46.36	1	0.21	SS
7	**Source of information** Family & friends Teachers Mass media	92 32 23	141 62 50	1.91	2	0.38	NS

The above table-27 Debits that the association of Hb% with selected socio-demographic characteristics after execution of planned-teaching activity. There were seven selected variables were tested with the Hb%.

With regard to age, there were three groups, 14 years, 15years and 16years. The obtained $\chi^2 = 4.11 < 5.99$ at 0.05 level.Indicating, no considerable union between HB% with age Hence the null hypothesis was accepted.

With consider to nature of family two groups were there, nuclear and joint-family. The obtained chi-square value was $0.04 < 3.84$ at 0.05 level. Indicating insignificant association between HB% with type of family. Hence null hypothesis was accepted.

With regard to occupation of father, there were four groups, Former /Daily wages, Private employee and Government employee. The obtained chi-square value was $0.99 < 7.82$ table value indicating which shows no significant association with HB% of adolescent girls and their father occupation at 0.05 level. Hence null hypotheses was accepted

With regard to Educational-status of mother, there were two groups, less than SSLC and above SSLC. The obtained chi-square value was $0.01<3.84$ the table value representing

significant association between HB with education status of mother at 0.05 level therefore . null hypothesis was accepted.

With regard to work-related position of mother, four groups there were i.e. Former & daily wages, homemaker, Private employee & Government employee The obtained chi-square value was 3.47 <7.82 table value at 0.05 level. Signifying no considerable association between BMI with work-related position of mother. Hence a null hypothesis was accepted.

With regard to type of diet there were two groups, vegetarian and mixed diet The obtained chi-square value was 46.36 > 3.84 at 0.05 level ,indicating, significant association between hemoglobin & type-of-food. which influences to reject null hypotheses.

With regard to source of information, there were three groups, family& friends, teachers and mass media. The chi-square value was 5.16 <5.99) signifying “no significant association” between source of information & hemoglobin. therefore Null-hypotheses was accepted .

SECTION-VI

INTERRELATION AMONG KNOWLEDGE AND BIOPHYSIOLOGICAL PARAMETER

This section deals with secondary **fourth objective** that was to "correlate between knowledge and bio-physiological para-meters subsequent execution of health communication.

TABLE – 35: CORRELATION BETWEEN KNOWLEDGE SCORESWITH BIOPHYSIOLOGICAL PARAMETER

N=400

Variable	r- value	p-value
Post test knowledge scores Verses BMI	0.16	0.00
Post test knowledge scores Verses HB%	0.85	0.00

Table-35 show the co-relation involving overall knowledge scores on managing of menstrual disorders and nutritional anemia with BMI. The PCC (Pearson correlation co-efficien's 'r') of BMI was 0.16 with p- value of 0.00 and in Hb % it was (r value) 0.85 with p-value -0.00 indicating p value be < (1.98) the table-value at 399 DOF (degree of freedom). Which proved there no inter-relation between knowledge scores with BMI and Hb% of adolescent girls. Therefore null hypothesis was retained.

TABLE – 36: CORRELATION BETWEEN HEMOGLOBIN AND BMI

N=400

Variable	r- value	p-value
Hemoglobin VS BMI	-0.033	0.515

The above table-36 showed that correlation between **HemoglobinandBMI**The Pearson's 'r' values was -0.033with P value +/- 0.515. Which shows BMI & HB% of adolescent girls there not correlated. Therefore null hypothesis was retained

Summary:

Analyzing and interpreting data on management of biophysiological Para-meters, menstrual disorders & nutritional anemia were discussed based on the findings with earlier research studies during the next chapter.

SECTION-III

"Effectiveness of PTP" on management of menstrual disorder and nutritional anemia.

With regard to second primary objective on **effectiveness of planned teaching intervention on management of menstrual disorders and nutritional anemia among adolescent girls** divulge that the pretest knowledgescore on managing of menstrual disorders was 16.26 with SD of 1.96 and the post-test scores of knowledge was 25.35 with SD 1.48 as increase in the knowledge gain of 9.09. The obtain paired "t" test was 76.51 which was significant at 0.05 level. These indicate PTP was helpful in improving knowledge in "adolescent girls". This was upholded by **a** study on Effectiveness of PTP on knowledge of l irregularity of cycles in adolescentgirls at *Aurangangabad.* It exposed that, the average percentage of posttest knowledge level **(80.62%)** of "adolescentgirls" was > their mean pre-test knowledge score **(23.42%)[66].**

With regard to managing of "**nutritional anemia"** the mean pretest knowledge level was 7.52 with SD of 1.14 & the post test mean knowledge level is 13.25 with SD of 1.01while rising the score of knowledge of 5.73. The obtained paired "t" test was 75.41 which were significant at 0.05 level. This statement was sustain by a article on prevalence, effectiveness of PTP, "anemia prevention and control in adolescents at Rajasthan. it exposed that posttest mean knowledgescore of **(27.25) > (18.66)** mean pre-test knowledge rate**.** This indicated that teaching intervention was effectual in humanizing the knowledgescore among the adolescentgirls[69].

Both present study findings and supportive study clearly states that, if teaching will administered to the pubescent girls their knowledge will improved. If management of menstrual disorders and nutritional anemia will be included in syllabus of secondary educational board then adolescent girls will be educated, intern the reproductive health problems can be prevented by future mothers.

SECTION-IV

ASSOCIATION OF KNOWLEDGE SCORE WITH SELECTED SOCIO-DEMOGRAPHIC VARIABLES

With regard to third primary objective that **association between level of knowledge among adolescent girls on management of menstrual disorders and nutritional anemia with selected sociodemographic characteristics after performance of PTP** reveals about chi-square values were > the standard value and Significant at 0.05 level for occupation of mother (χ^2=21.55), type of food (χ^2=25.04) and source of information (χ^2=72.14) whereas for age (χ^2=5.23), kind of family (χ^2=0.03), occupation of father (χ^2=4.28),, and education of mother (χ^2=3.61), the calculated values were less than the table value. Consequently no plenty of evidence to accept or reject the null hypothesis.

This assessment was prop up by two articles on efficiency of PTP on awareness of menstrual irregularity in adolescent girls, at Aurangangabad and “Incidence of menstrual problems of bachelor adolescent girls and medical assistance seeking behavior" in Chandigarh, India[66].

With regard to the **“association” with level of knowledge in “adolescent girls” on administration of “nutritional anemia” with selected sociodemographic data after implementation of PTP** reveals thatthe chi-square values were more than the table values for occupation of mother (χ^2=18.47), education of mother (χ^2=21.5) and source of information (χ^2=6.55 “Significant at 0.05” level whereas for age (χ^2=3.51), nature of family (χ^2=0.95), occupation of father (χ^2=6.48), and food type (χ^2=0.77), the calculated values < table value which was “not significant” at 0.05 level. Due to no ample of facts to accept or reject null hypothesis.

The pronouncement was support a study on usefulness of PTP on anemia R/T iron deficiency of “Fe” in adolescent girls in Ahilya bai Holkar high School. This revealed that

age (χ^2=2.11) education (χ^2=0.35), family type (χ^2=0.14), diet (χ^2=0.8), and sources of previous knowledge (χ^2=0.58), the chi-square values <standard value at which was not significant 5% level[70].

Most of adolescent girl's parents had education up-to primary level and comes from agriculture family. Major resource for information about menstruation was family members i.e. mother and sisters due to demographic variables influence even though PTP was efficient in improving the " scores of knowledge" no association was identified. other than this a shay in nature adolescent girls avoid them to discuss with her mother on menstrual disorder even if they are discussing nutritional problems because of this reason we could not associate socio-demographic variable with knowledge score.

SECTION-V

ASSESSMENT OF BIO-PHYSIOLOGICAL PARAMETERS OF ADOLESCENT GIRLS

BMI: With consider to first secondary objective on **assessment of biophysiological parameters of adolescent Girls** BMI revealed that, majority(60.63%, 76.11% and 59.3%) of them were underweight in all age groups(14years, 15 year and 16years respectively) whereas 39.37%, 23.89% and 40.63% are have regular BMI & nobody of them were with overweight. This finding was supported in a study on relationship between "BMI" and Menstruation Irregularities" in the senior school girls, at Dhulikhel municipality, Nepal, exposed that, out-of the 253 "adolescentgirls" 155(61.3%) are with normal weight, 58(22.9%) be "under-weight" and 40 (15.8%)of them were "overweight"[71].

Hb%:With regard to this majority(86.63%,76.99 and 89.37%) of "adolescent girls" were having normal Hb% in all age groups(14years, 15 year and 16years) , whereas 12.59%, 20.35% and 10% of them were having mild anemia, 0.78%, 2.66% and 0.63% of them were having moderate anemia and not any of them are with severe anemia. These findings were supported by a study on "Correlation irregularities menstruation to BMI and dietetic status" among adolescent girls, at Hyderabad, exposed that 230 "adolescent girls" are clinically anemic. 277 (69%) of them had normal BMI, 108 (27%) were underweight with a BMI of (14 – 18.49kg/m^2), while 16 (4%) were overweight with (BMI = 25 – 29.99 kg/m^2).[72]

SECTION-VI

EFFICIENCY OF PTP ON BIOPHYSIOLOGICAL PARAMETER

With regard to second secondary objective on "Effectiveness of PTP" on Biophysiological Parameter of Adolescent Girls by comparing Pre & Post test observed values, concealed that the "BMI" of "adolescentgirls" pretest mean value on under -weight was 15.91, 15.50 and 16.00 correspondingly 14 years,15 years and 16 year. While the post test mean value of BMI was,15.88, 15,70 and 16.22 respectively in the age group of 14 years,15 years and 16 years. The obtain "t" value was > the table value (1.65) this show that the PTP was effective in improving the BMI value & "not statistically significant".

Adolescent girls with **Norma BMI** in the age 14,15&16 year mean value of BMI with "adolescent girls" in pre test were 19.56, 20.04 and 19.89 with SD of 0.88 1.30 and 1.40 in that order of 14 years, 15 years and 16 years whereas the mean post test value of BMI was, 20.35, 19.78 and 19.93 with SD of 1.60, 1.08 and 1.49 respectively in the age group of 14 years,15 years and 16 years. The obtain "t" value was < table value (1.65) which show that statistically not significant.

With regard to HB level the **Normal** mean value of Hb% in "adolescent girls" in pretest were 11.89, 12.59 and 12.37 with SD of 0.48, 0.80 and 0.75 respectively in the age group of 14 years,15 years and 16 years where the mean posttest value of were,12.30,and 11.80 with SD of 0.75,0.28 and 0.97 respectively in the age group of 14 years,15 years and 16 years. The obtained allover "t-value" < then the table value (1.96) this proves "statistically not significant"

In terms of **Mild anemia** the mean Hb% of adolescentgirls in pre-test was 10.27,10.34 and 10.26 with SD of 0.39, 0.33 and 0.33 respectively in the age group of 14 years,15 years and 16 year while the post test mean value was,9.38, 10.17 and 9.88 with SD

of 0.28, 0.44 and 0.24 respectively in the age group of 14 years,15 years and 16 years. Calculated “t- value” was < table value indicates “statistically not significant”.

In context of **moderate anemia** the pretest mean Hb% of adolescent_girls was 8.2, 8.7 and 8.2 with SD of 0.00 correspondingly 14 Yrs, 15 Yrs & 16 Yrs age. whereas the posttest mean value was,8.2 in 14 years age group, where as in on one recognised with sensible anemia in 15 year age. & in the 16 year old mean value was 8.2 respectively. The t value was not calculate to due to less frequency.

SECTION-VII

"ESTABLISH THE ASSOCIATION BETWEEN BIO-PHYSIOLOGICAL PARAMETER" WITH CERTAIN SOCIO-DEMOGRAPHIC VARIABLE

With view of 3rd secondary objective that relationship with Biophysiological Parameter body mass index (BMI) of adolescentgirls with certain Socio-demographic Variable after execution of educational activity, reveal that the chi-square values was > than the table-values, indicates significant for type of food (χ^2=12.98) and source of information (χ^2=9.96) and for age nature of family unit (χ^2=3.57), occupation of mother (χ^2=1.75**),** occupation of father and qualification of mother (χ^2=0.76), the calculated values were < the table value there is no sufficient evidence to accept or reject the "null hypothesis". Which support by a study on connection b/w BMI and "Irregularities of Menstruation" with the senior school girls, at Dhulikhel municipality, Nepal, **there was association** between the BMI and irregular menstrual cycle (p=0.024), oligomenorrhea (p=0.027), Polymenorrhea (p=0.006) and hypomenorrhea (p=0.01). There is **no association** between the BMI and metrorrhagia (p=0.147), secondary amenorrhea (p=0.369), dysmenorrhea (p=0.362) and menorrhagia (p=0.422)[78].

With regard to Hb of adolescentgirls reveal that the chi-square values were more than the table rate & "significant" at 0.05 level for type of food (χ^2=46.36) whereas for age (χ^2=4.11), type of family (χ^2=0.04), occupation of mother (χ^2=3.47), occupation of father (χ^2=0.99), and education of mother (χ^2=0.01), & resource of data (χ^2=1.91) the calculated values were < the (7.82) table value. These prove there is "no adequate evidence" to accept or reject the null hypothesis.

Decision was prop up in a study on success of PTP "Planned teaching programm" on iron deficiency anemia in adolescent girls, Loni Maharashtra. Results reveals that the χ^2 values were <the standard value and statically not-considerable at 0.05 level for age

(χ^2=2.11), Education (χ^2=0.35) type of family (χ^2=0.14), religion(χ^2=0.02)Diet(χ^2=0.8), and source of information (χ^2=0.58) .which shows that intended value < the table value for every socio-demographic chacterstics at 5% significant. Implies that association between socio demographic variables and knowledgescore of post-test on anemia due iron deficiency in "adolescent girls" was **not significant** .[79]

SECTION-VIII

With regard to fourth secondary objective on Correlation with "Knowledge Score" & "Bio-physiological Parameters" following performance of PTP the Pearson's 'r' value b/w knowledge and BMI was 0.08, < (1.98) at 399 degree freedom. Proves a weak correlation between knowledge and BMI, which was "not significant". There were no studies to support this findings.

With regard to haemoglobin % the Pearson's 'r' = 0.07 < (1.98) at 399 degree freedom. This indicate a" "feeble correlation" b/w knowledge and Hb%, which was "not significant". There were no studies to support these findings.

With regard to BMI verses hemoglobin % the Pearson's 'r' value was -0.03 which was < (1.98) at 399 degree freedom. This indicate "weak relationship" B/w BMI and Hb%, which was not significant. It is support by a study on Correlation of "hemoglobin" "Hb" versus BMI "body mass index" and "body fat" among young adult female medical students Berhampur, Odisha, India. Correlation between Hb and BMI was $r = -0.49$, $P < 0.001$, which shows there was a significant negative correlation of Hb level with BMI *at* $P < 0.001$ level[80].

CHAPTER - VII

SUMMARY

This chapter presents a concise outline of the output with limitations, nursing applications, references for coming up researchers and for future research and termination of research process. Here investigator expected at verdict effectiveness of PTP on Knowledge and Biophysiological Parameter regarding handling of menstrual disorder and dietary deficiency anemia in adolescentgirls within the selected government high schools rural Kolar Taluk.

MAJOR FINDINGS

Socio demographic data: adolescentgirls provision base on the related socio-demographic variables which disclosed 40% of the adolescentgirls were belonging 15-16 years age, majority (92%)are Hindus, most (60%) samples come from Nuclear family, (51.25%) of their parents completed primary-education, 70.25% are formers, 50.75% of their mothers had primary education, **55%** of adolescent girls mothers were working as formers or doing farming work as daily wages, 68.25% of them were taking mixed diet and most (35.75%) of them got information on management of menstrual disorders and nutritional anemia from friends.

Theoverall knowledgeon management of menstrual disorders and nutritional anemia:

The total knowledge score of adolescentgirls on management of menstrual disorders reveals that, all-most 71.75% of the participants have inadequate knowledge where as 28.25% of of adolescent girls having quite good knowledge and nobody had enough awareness. With regard to total knowledge gain in management of nutritional anemia shows that, at most 80.75% of participants have insufficent knowledge, 19.25% having reasonably tolerable knowledge & no one having adequate knowledge.

The overall Biophysiological parameters scores:

With regard to BMI, majority (60.63%, 76.11% & 59.5%) of adolescentgirls were underweight in all age groups(14years, 15 year and 16years) whereas 39.37%, 23.89% and 40.65% are with normal BMI and nobody identified with overweight. With regard to Hb% majority(86.63%,76.97 & 89.39%) of adolescentgirls were having normal Hb% in all age groups (14years, 15 year and 16years), whereas 12.59%, 20.35% and 10% of them were having mild anemia, 0.78%, 2.66% and 0.63% of them were having moderate anemia & no of one are identified with severe anemia.

Effectiveness of PTP on knowledge and biophysiological parameter

Interns to Effectiveness of PTP on management of menstrual disorder and anemia due to nutritional deficiency show that mean knowledge score pretest was 24.24 with SD of 2.98 and the post test mean knowledge score was 38.10 ± 2.37. The obtained paired "t" test value was 72.44 which was statistical significance at $p<0.05\%$.

With regard to body mass index the pretest mean score of adolescentgirls were 17.39 with SD of 4.35, but the total score in post test was 17.34 with SD of 4.36. The paired t-test value was 2.48. Which was statistically not significance at $p<0.05\%$.

With regard to Hb% the pretest average score of adolescentgirl was 12.94 with SD of 8.55, where the post test Hb% was 11.36 with SD of 1.17. The paired t-test value is 3.63.which was statistical significance at $p<0.05\%$.

Relationship between knowledge score with selected socio demographic variables

"Association" of knowledgescore on **management of menstrual disorders** with selected socio-demographic characteristics show "a significant association" in kind of food (χ^2=25.04), occupation of mother (χ^2=21.55) and source of information(χ^2=72.14) except age

(χ^2=5.22), type of family(χ^2=0.03), occupation of father(χ^2=4.28), and education of mother(χ^2=0.76).

In context to alliance of knowledgescore on **nutritional anemia** with certain socio-demographic data disclosed that "significant association" in literacy state of mother (χ^2=21.5), occupation of mother (χ^2=18.47) and source of information(χ^2=6.55) except age (χ^2=3.50), type of family(χ^2=0.95), occupation of father(χ^2=6.5), & kind of diet (χ^2=0.77).

With regard to association of **BMI**with selectedsocio demographic variables revealed "significant-association" with nature of food (χ^2=12.98), source of information (χ^2=9.94) excePTPge (χ^2=7.39), type of family(χ^2=3.57),occupation of mother (χ^2=1.75) occupation of father(χ^2=13.17), and education of mother(χ^2=0.76).

With regard to association of Hb% with socio-demographic variable reveals "Significant association" with kind of food (χ^2=46.38) except age(χ^2=4.11),type of family(χ^2=0.04), occupation of father(χ^2=0.99),education of mother(χ^2=0.01)occupation of mother (χ^2=3.47) & resource of information (χ^2=1.91).

Correlation between BMI &Hb%

"Correlation" among **BMI and Hb%** of adolescent girls reveals "there was weaker correlation (r= -0.03) between **"**BMI and Hb%**"** and "not significant"(p=0.515).

MERITS OF THE STUDY

A thorough search made via researcher onstudies related to adolescent girlsKnowledge and "Bio-physiological parameter" allready few studies conducted on "BMI and Hb%" and **NO** studies found with knowledge and biophysiological parameters

- PTP helped the "adolescent-girls" to gain knowledge on management of menstrual disorders and nutritional anemia.
- This PTP help the adolescent girls to gain knowledge to maintaining healthy BMI and Hb%.
- The intervention help the adolescent girls to solve minor menstrual problems with-in their limits and to take adequate nutrition to lead a healthy life at present and in future.

LIMITATIONS

With malevolence merits and + ve aspect, this research has its own limitations like any other. the limitations presented as follows.

- It is limited only to high schools of rural Kolar.
- It was limited to adolescentgirls who were aged between 13-16 year and attained menarche.
- Limited to Four hundred adolescentgirls

CONCLUSION

Findings can be concluded as below;

- PTP was effective in escalating the scores of knowledge among adolescent girls but not the biophysiological parameters.
- "No association" with knowledge score of post test and socio-demographic data except type of food, mother occupation and resource for data in "adolescent-girls".

- Among knowledge and bio-physiological parameters of adolescentgirls a **week** correlation was identified.
- Outcome of the study emphasized, we should educate adolescentgirls about medical handling of menstrual disorders and nutritional anemia.

IMPLICATIONS FOR NURSING

The obtained data does not conclude several implications for nursing administration, nurse practice nor, nurse educator and research nurse.

Administration of nursing

The output will help the nurse administrators to take adequate steps in formulating the policies that provide support at both institutional and community levels.

- The nursing administration should encourage the government authorities/BEO/CEO to include content on management of menstrual disorders and nutritional anemia including improvement of BMI in the high school syllabus.
- The community nursing administrators can plan money, material and manpower to conduct awareness programme on management of menstrual disorders and nutritional anemia including improvement of BMI for all school childrens and their parents.
- The nurse administrator can encourage the government authorities/BEO/CEO to plan orientation training programme to teaching faculties of school about management of menstrual problems and deficiency anemia including upgrading of BMI so that they can identify problems in the start point itself and submit to the Health authorities if required.

Nurse educator:

The outcome of results disclosed that "The "Planned teaching programm" was effective in refining the details of managing of problem r/t menses and nutritional anemia."

in adolescent girl. Implication for nurse educator could give great emphasis in motivating the education department, school teachers, and /anganwadi workers who work in community. Community health nurse/anganwadi workers should be harried to endow with “health education” and “Nutrition supplement” programs to adolescent girls & her family.

Nursing research:

There is an ample of scope for investigate in the field area of “adolescent wellbeing issue”. The result of represents, greater num (80.75%) of “adolescentgirls” having not enough knowledge and after PTP there was no up-gradation in biophysiological parameters such as BMI and Hb%. This shows in-spite of number of health programmes exiting by government of Karnataka/ India still there is something lagging behind. Hence there is lot of research studies must conduct in this area.

RECOMMENDATIONS

- A similar study can be undertaken using true experimental design.
- A "longitudinal study" to distinguish the efficiency of "PTP" "planned teaching program" on biophysiological parameter can be conducted.
- A "cross sectional study" on awareness about managing of menstrual disorders and nutritional anemia among adolescent's motherscan be conducted.
- "Descriptive study" on knowledge about managing of menstrual disorders and nutritional anemia with senior school faculities can be conducted.

"Effect" of programme from government to adolescent girls in prevention of menstruation disorder and nutritional anemia.

CHAPTER - VII

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Annexure-A

Sri Deva raj Urs Academy Higher Education & Research center
Tamaka Kolar 563103

From
Mrs. Malathi K V
Assistant professor
Ph.D. scholar
SDUAHE&RC
Tamaka, Kolar

To
Head master/Head madam
Government High School
Kolar Taluk

SUB: Requesting for permission to conduct research study

Respected madam,

With reference to above I request you to kindly grant permission to Conduct a research study in your intuition as a part of Ph,D programme. The details of my research study enclosed

As a research scholar I will be collecting data regarding menstrual disorders, nutritional anemia & its management, and measuring height weight & Hemoglobin of adolescent girls (13-16 Yrs) without disturbing school activities.

I request your good self to grant permission for the same & do the need full

Thank you

Yours faithfully

(Mrs. Malathi K.V.)

ANNEXURE –B

CRITERIA RATING SCALE FOR THE VALIDATION OF THE RESEARCH TOOL, OBJECTIVES AND LESSON PLAN CONTENT

Respected madam / Sir,

Kindly go through the content and place tick mark (✓) against questionnaire in the following columns ranging from very relevant to not relevant, when found to be not relevant and needs modification kindly give your opinion in the remarks column

Sl. No.	Content	Very relevant	Relevant	Needs modification	Not relevant	Remarks
1.	**Formulation of Objectives:** • General objectives • Specific objectives • Respondent centered 2. • Realistic to achieve outcome Specific to measure the outcome **Selection of content:** • Adequate to achieve the objectives • According to the cognitive level of the participants • Aims at improving the Students knowledge Continuity of the content					

3.	**Organization of the content:** • Arranged in a logical sequence • Integration of content from simple to complex					
4.	**Language:** • Simple to comprehend • Clear to perceive the meaning of content					
5.	**A.V. aids** • Simple, clear and understandable • Represents the concept of the content adequately					
6.	**Practicability and feasibility:** • Permits learning • Useful to all					

Suggestions: _____

_____

_____

Signature of the valuator:

Name:

Designation:

Part: II Knowledge Questionnaire	**Relevant**	**Not relevant**	**Needs modification**	**Remarks**
RELATED TO **Female reproductive system & menstruation**				
1				
2				
3				
4				
5				
6				
7				
RELATED TO **Premenstrual syndrome**				
8				
9				
10				
11				
RELATED TO **Dysmenorrhea**				
12				
13				
14				
15				
RELATED TO **Prolonged periods**				
16				

17				
18				
RELATED TO **Frequent & delayed periods**				
19				
20				
21				
22				
23				
RELATED TO **Management of menstrual disorders**				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
Knowledge Questionnaire Management of nutritional anemia	**Relevant**	**Not relevant**	**Needs modification**	**Remarks**

Related to physiology of blood				
36				
37				
38				
Related to nutritional anemia				
39				
40				
41				
42				
43				
44				
Related to Preventing and management of anemia				
45				
46				
47				
48				
49				
50				
51				
52				

Comments & Suggestions:

Signature of Expert

ANNEXURE-C

LIST OF EXPERTS

1. **Prof Dr.G.Kasturi, Ph.D.**
   Consultant/Director in Nursing Education,
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2. **Dr. Valliyammal**
   Lecturer, Dept. of paediatrics nursing
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3. **Dr. Sudha Reddy V.R**
   Professor & HOD of Pediatrics,
   Sri Devaraj Urs Medical College,
   Tamaka kolar-103

4. **Dr. Beere Gowda Y.C**
   Professor, pediatrics dept,
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5. **Dr.Ranganath**
   HOD of Community Medicine Department,
   Sri Devaraj Urs Medical College,
   Tamaka kolar-103

6. **Dr. Zeanath C.J**
   HOD of Medical Surgical Nursing,
   Sri Devaraj Urs college of Nursing ,
   Tamaka kolar-103

7. **Prof Radha M S**
   Vice principal & HOD of pediatrics Nursing ,
   Sri Devaraj Urs College of Nursing,
   Tamaka kolar-103

8. **Prof Silvia Surekha**
   HOD of OBG Nursing ,
   Sri Devaraj Urs College of Nursing ,
   Tamaka kolar-103

ANNEXTURE –D

ENGLISH EDITING CERTIFICATE

I hereby certify that I have edited the content of dissertation titled **Effectiveness of Planned Teaching Programme on Knowledge & Biophysical parameters of adolescent girls regarding management of menstrual disorders & nutritional anemia in selected Government high schools of Rural Kolar taluk**. of Mrs. Malathi K V Ph,D scholar, Sri Devaraj Urs Academy of Higher education and Research.

Signature and Designation

ANNEXTURE –E

KANNADA EDITING CERTIFICATE

I hereby certify that I have Translated the content of tool, lesson plan and consent for dissertation titled **Effectiveness of Planned Teaching Programme on Knowledge & Biophysical parameters of adolescent girls regarding management of menstrual disorders & nutritional anemia in selected Government high schools of Rural Kolar taluk"**. of Mrs. Malathi K V Ph,D scholar, Sri Devaraj Urs Academy of Higher education and Research.

Signature and Designation

ANNEXTURE –F

CONSENT LETTER

Dear participant,

I am a Ph,D Scholar of Sri Devaraj Urs Academy of Higher Education And Research, Kolar, conducting study on" Effectiveness of Planned Teaching Programme on Knowledge & Biophysical parameters of adolescent girls regarding management of menstrual disorders & nutritional anemia in selected Government high schools of Rural Kolar taluk". You will be asked about your demographic information and information related to Menstrual disorders and nutritional anemias. I would like you to be as a participant in my study. The study will not cause any harm to you. The information's given by you will be kept confidential and only used for the study purpose. Hope you will co- operate with me for the fulfillment of the research project.

Thank you in advance for your cooperation. Kindly sign the consent form given below.

Signature of the Investigator

I have read the procedure described above and I voluntarily agree to participate in the research study.

CONSENT FORM

I_____ here with consent for the above said the investigator would treat study knowing that all the information provided by me with utmost confidentially.

ANNEXURE-G

STRUCTURED KNOWLEDGE QUESTIONNAIRE ON ADOLESCENT HEALTH PROBLEMS.

INSTRUCTIONS:

Dear participants in structured knowledge questionnaire, there are questions related to your demographic data and knowledge on management of menstrual disorders and nutritional anemia among adolescents' girls for which there will be four options as answers, one will be the correct answer. Whichever you feel appropriate answer for the questions, you can put tick mark against the answer.