



# “A study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD ) among adolescent girls in selected schools of Indore (M.P.)

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## ABSTRACT

### BACKGROUND AND OBJECTIVES

Gynecological problems of adolescents occupy a special space in the spectrum of gynecological disorders of all ages. This is because of the physical nature of the problems, which are so unique, special, and specific for the age group, and because of the associated and psychological factors, which are very important in the growth and psychological remodeling of someone in the transition between childhood and womanhood. Gynecological diseases are common but most of us women ignore the symptoms or we are unaware, until the time the problem really worsens. One of them, now days faced by girls, is POLYCYSTIC OVARIAN DISEASE (Stein leventhal Syndrome). This is the commonest course of Amenorrhea in young girls. Stein and Leventhal first described the Amenorrhea with polycystic ovaries in 1935. PCOS, also known as Polycystic Ovarian Syndrome, is reported to be a Grow problem with adolescent girls. It can be very difficult to diagnose PCOD in teenage girls as they often experience irregular or absent menses and acne.

### THE OBJECTIVES OF THE STUDY ARE:

1. To assess the pre-test knowledge score regarding (PCOD) among adolescents girls.
2. To assess the post test knowledge score regarding PCOD among adolescents girls.
3. To determine the effectiveness of structure teaching programme regarding PCOD in terms of knowledge score among adolescents girls.
4. To find the association between pretest knowledge score with the selected demographic variables .

Conceptual framework is a theoretical approach .To study of problems that are scientifically based and emphasizes the selection and clarification of its concepts. Interrelated concepts or obstructions that are assembled together in some rational scheme by virtue of their relevance to a common theme are rethreaded to as conceptual framework (Polite and Hungler 2005). Finally, conceptual frame work sever as a guide to a systematically identifying logical, precisely defined relationship among variables (Potter & Perry 2005).

The present study aimed at assessing effectiveness of structure teaching programme on knowledge of adolescence girls regarding the PCOD, it aim to improve the knowledge of adolescence girls.

## Methods

A structured test was prepared for assessment of knowledge of adolescent girls regarding PCOD. It will be based on literature extracted from journals, books, research, report & personal experience & expert guidance. The tools used in the study are:

**Section 1:** Socio-demographic variables.

**Section 2:** Structured knowledge questionnaire.

## Results

The findings of the present study are discussed with reference to the objective, hypotheses and the finding of other studies. Discussion of finding is based on the sample characteristics, knowledge and among adolescent girls regarding PCOD, effective structure teaching programme, association of knowledge and selected variables.

### Association between knowledge and selected demographic variable

The chi square computed between pre test knowledge score and selected demographic variables should that there is no significant association between the level of knowledge scores and selected demographic variables with regard to age in year (15-17 year), no. of female family members, religion, type of family, family monthly income, education of mother, and source of information.

Thus association between knowledge and selected demographic variables is non significant hence hypotheses (2) is rejected

### Frequency and percentage distribution of sample characteristics and demographic variables

In the present study demographic characteristics of among adolescents girls are discussed by age, no. of female family members, religion, type of family, family monthly income, education of mother, and source of information.

There was age distribution of subjects adolescent girls age 7(13%), belong below 13 years of age, 15 (37%) belong in 14-15 years of age, 13(33%) belong 16-17 year age, 5(13%) belong 18 and above year of age.

Regarding the number of female family members, 10 subjects (25%) have only 1 female family member, 14 subjects (35%) have 2 female family members, 7 subjects (20%) have 3 female 9 subjects (30%) have more than 3 female family members.

Most of subject 32(87%) belong to Hindu religion, 3(5%) to Christian, 5(5%) to Muslim, 0 (%) to other respectively. The majority of subject belongs to Hindu religion.

Regarding to type of family 27 subjects (67%) lives in nuclear family, 12 subjects (30%) lives in joint, 1 subject (03%) to extended, 0 subjects (0%) lives to other family member respectively.

Regarding the family income, 5subjects(12%) has 3000 to 5000 as their family income, 14 subjects (35%) has 5000 to 7000 their family Income,17 subjects (43%) has 7000 to 10000 as their family income 4 subjects (10%)has family income abov10000 .

Regarding education of mother, 29 subjects (73%) mothers were illiterate, 15 subjects (20%) mothers were educated upto primary level,08 subject (7%) mothers were educated upto secondary level 4(10%) mothers were graduated.

Regarding to information 14subjects ((35%) to family members,10 subjects (25%) to peers, 12 subjects( 30%) to mass media 4 subjects (10%) health personnel are source of information. Family members are higher % of source of information respectively.

### **FEQUENCY AND PERCENTAGE DISTRIBUTION OF PRETEST AMD POST KNOWLEDGE SCORE**

That maximum knowledge score regarding PCOD, of pre-test were 67% (27) between 0-8 poor knowledge score &33% (13) between 9-16 average knowledge score & in post-test knowledge score were 100% (40) between 17-24 good knowledge score.

### **COMPARISON OF MEAN PRETEST AND POST TEST KNOWLEDGE SCORE:**

That the mean post-test knowledge score (18.57) is apparently higher than the mean pre-test knowledge score (08).

Above table 03 shows, that statistically there was significant difference in knowledge score of PCOD of the students in selected school of Indore. The calculated values are compared and paired' test is applied at 0.05 level of significant. The tabulated "t" value for 39 degree of freedom is 2.023 and calculated "t" value 20.12 level of significant.

Hypothesis was tested by using paired "t" test. The "t" was calculated to analysis the score of PCOD of the students in school of Indore with their pre-test and post-test score. The research hypothesis was formulated to evaluate a study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD) among adolescent girls in selected schools of Indore (M.P.)

## ASSOCIATION BETWEEN LEVEL OF PRETEST KNOWLEDGE AND SELECTED DEMOGRAPHICAL VARIABLE

1. The association between the demographic variable age with knowledge score grading. The chi-square value obtained is 6.11 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that age does not affect the knowledge score grading.

2. The association between the demographic variable no. of female family member with knowledge score grading. The chi-square value obtained is 1.45 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that no. of female family member does not affect the knowledge score grading.

3. The association between the demographic variable religion with knowledge score grading. The chi-square value obtained is 5.85 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that religion does not affect the knowledge score grading.

4. The association between the demographic variable type of family with knowledge score grading. The chi-square value obtained is 1.41 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that type of family does not affect the knowledge score grading.

5. The association between the demographic variable family monthly incomes with knowledge score grading. The chi-square value obtained is 1.40 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that family monthly income does not affect the knowledge score grading.

6. The association between the demographic variable educations of mother with knowledge score grading. The chi-square value obtained is 3.44 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that education of mother does not affect the knowledge score grading.

7. The association between the demographic variable sources of information with knowledge score grading. The chi-square value obtained is 0.62 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that source of information does not affect the knowledge score grading..

### Interpretation and Conclusion

The aim of this study was to assess the knowledge of adolescent girls on PCOD the information was given with the aid of STP which included various aspects menarche and menstruation, dysmenorrheal

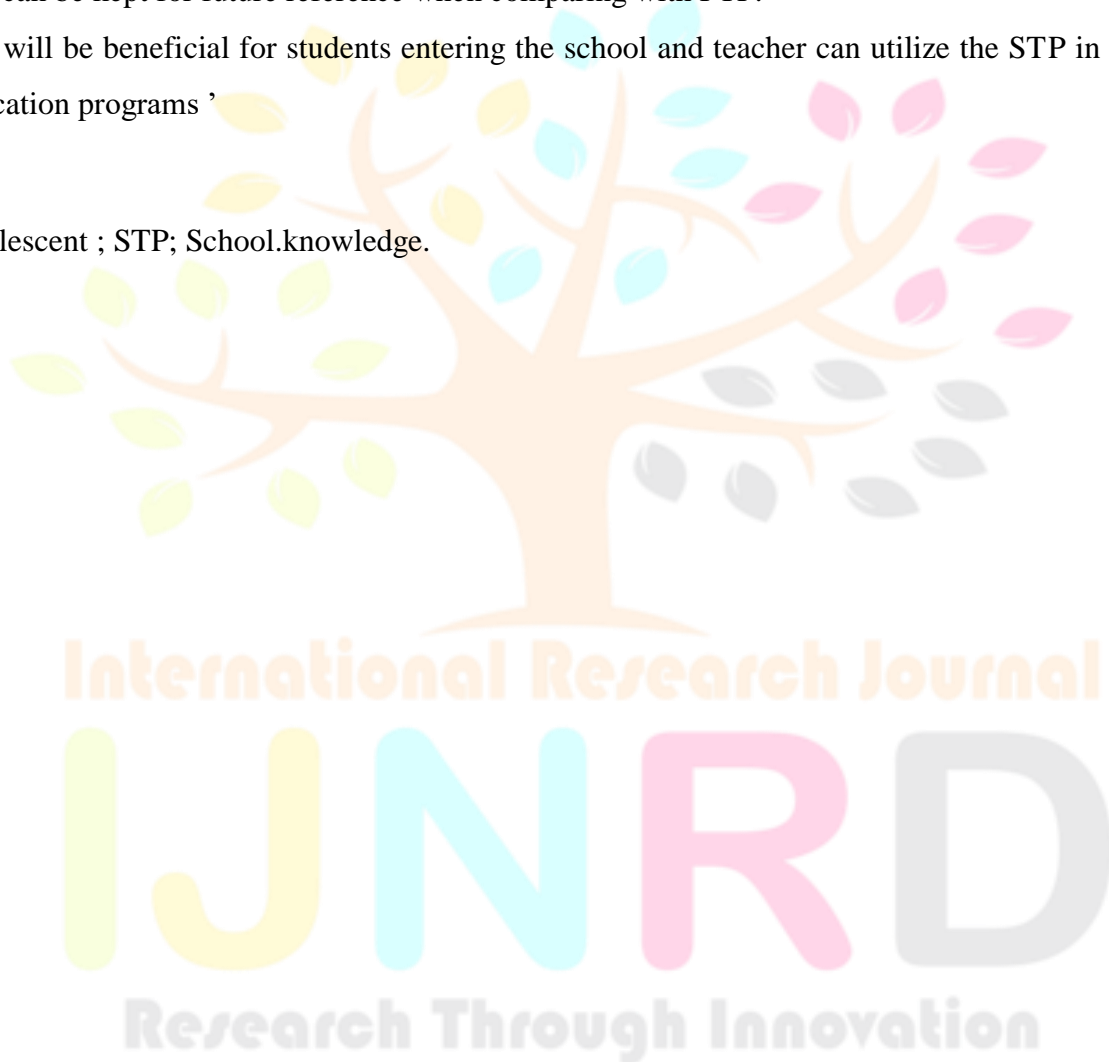
amenorrhoea duration of menstruation cycle which will help the adolescent girls to improve their knowledge and to adopt – a healthy lifestyle .

The following conclusion were draw based on the present study,

- PCOD are the commonest problem among the adolescent girls.
- Dysmenorrhoea is one of the leading causes for absenteeism
- The knowledge of the adolescent girls was not up to the mark before the introduction of STP.
- After the introduction of the STP the post test finding showed the significant increase in the knowledge adolescent girls on PCOD.
- STP is known to be one of the effective teaching structures.
- STP can be kept for future reference when comparing with PTP.
- STP will be beneficial for students entering the school and teacher can utilize the STP in the day to day education programs ’

### Keywords

PCOD, Adolescent ; STP; School.knowledge.



# **CHAPTER I**

## **INTRODUCTION**

**“BREAKING SILENCE AND SHAME AND CELEBRATING THE SACRED LIFE GIVING MENSTRUAL CYCLES OF WOMEN’S BODIES IS A MAJOR STEP TOWARDS REALIZING THE FULL POTENTIAL OF HUMANITY.”**

**Jensen Larsen**

### **INTRODUCTION**

Adolescence is the most pivotal period of life, yet one of the most vulnerable times for physical ailments. Adolescents (13-17years) form a large section of population about 22.5 percent, that is, about 225 million. According to recent statistics more than 50% of the world’s populations are below the age of 25 and one fifth are adolescents (WHO1995). In India one third of the population are between the ages of 10 and 24<sup>1</sup>.

Today we are living in a period of modernization. The effect of modernization and technological advancement reflects in everyday life. Our lifestyle also has changed a lot. Food intake is becoming more concentrated on sugar, fast food, and soft drinks and less on healthy, traditional fare. This unhealthy food habits and lack of exercise leads to many diseases in adolescents like Polycystic Ovarian Disease (PCOD)<sup>2</sup>.

Polycystic ovarian Disease (PCOD) is the most common endocrinopathy, characterized by obesity, amenorrhea, oligomenorrhea and androgenic features. Those with PCOD are also at increased risk for diabetes and cardiovascular disease, with a risk of myocardial infarction 7 times the normal. If patients with PCOD are screened for these diseases, many long-term complications can be prevented<sup>3</sup>.

Stein and Leventhal first described PCOD in 1935. Our understanding of the Pathophysiology of PCOD has dramatically changed since then. Now, there is particular emphasis on its relationship with insulin resistance. PCOD is a chronic hyper androgenic state that has many significant short-term and long-term implications for patients such as oligomenorrhea, amenorrhea, infertility, diabetes mellitus, cardiovascular disease, increased risk of endometrial cancer and excessive body hair. Polycystic ovarian Disease (PCOD) is a leading cause of infertility. It affects 35 per cent of women in their reproductive years and more than 90 percent of obese women<sup>4</sup>.

Teenagers may experience the full range of PCOD symptoms often seen in more mature women including irregular or completely absent periods, heavier than normal menstrual bleeding, ovarian cysts, hirsutism (excessive facial or body hair) and alopecia (male pattern baldness). Other symptoms range from acne, skin tags (growths on the skin) and brown skin patches to reduced sex drive, exhaustion or lack of mental alertness, depression anxiety, sleep apnoea (trouble breathing during sleeping) and thyroid problems. Teens that are overweight are increasingly being linked with Polycystic Ovarian Syndrome<sup>5</sup>.

Weight control and regular exercise improves many aspects of PCOD. The cycles become more regular, androgen levels are reduced, lipid and glucose metabolism improves, and spontaneous pregnancy may follow. This is because visceral fat is metabolically more active, and weight loss of a few percent is associated with significant loss of visceral fat. On the basis of these observations, weight management by dieting and exercise is now recommended to all overweight/obese women<sup>6</sup>.

Up to 10% of women and girls worldwide have polycystic ovary Disease (PCOD), a complex hormonal disorder for which there is no cure. If left untreated PCOD can be a precursor to many life-threatening conditions including type II diabetes, hypertension, cardiovascular disease, and stroke and kidney problems. This means PCOD contributes to some of the leading causes of death and disability in women today<sup>7</sup>.

### 1.1 BACK GROUND OF THE STUDY:

Gynecological problems of adolescents occupy a special space in the spectrum of gynecological disorders of all ages. This is because of the physical nature of the problems, which are so unique, special, and specific for the age group, and because of the associated and psychological factors, which are very important in the growth and psychological remodeling of someone in the transition between childhood and womanhood. Gynecological diseases are common but most of us women ignore the symptoms or we are unaware, until the time the problem really worsens. One of them, now days faced by girls, is POLYCYSTIC OVARIAN DISEASE (Stein leventhal Syndrome). This is the commonest course of Amenorrhea in young girls. Stein and Leventhal first described the Amenorrhea with polycystic ovaries in 1935. PCOS, also known as Polycystic Ovarian Syndrome, is reported to be a Grow problem with adolescent girls. It can be very difficult to diagnose PCOD in teenage girls as they often experience irregular or absent menses and acne.

A population study revealed that overt and occult PCOD accounted for 90% of patients with oligomenorrhea and 37% with amenorrhea, or 73% with Oligo- or amenorrhea. Oligo- or amenorrhea accounted for 21% of couples with infertility and the annual incidence was 247 patients per million of the general population. The annual incidence of infertility due to PCOD per million was 41 with overt PCOD and 139 with occult PCOD (total 180). Of those, 140 appeared to respond well to clomiphene (78%) but 40 (22%) failed, requiring alternative therapy. Polycystic ovarian disease is also known as Stein Leventhal Syndrome (PCOD), about 6 to 10% of girls gets affected by this disease and are even not aware of their presence. In a prospective study of 400 women of reproductive age, 4% to 4.7% of white women and 3.4% of African American women had PCOS. 2 A similar rate of 4% to 6% has been found in other populations. Polycystic ovarian disease prevalence is fast increasing among schoolgirls in urban Mumbai about 30% of young college girls were detected with the POCD.

A study on teen girls and college girls in several schools around India was found to show a higher percentage of college girls with PCOD and there was around 36 % of increase in cases of PCOD compared from a period of 2007-08, showing a severe fast increase of cases of PCOD among schoolgirls in an alarming rate.

Polycystic Ovarian Disease is not curable but treatment is available to alleviate the symptoms. This disease is so dread able that such girl are unable to conceive and its pathology of spreading to other organ is far greater than that of infertility, which is a common finding, high blood pressure, excessive pimples and rise in level of insulin, are the common findings. Present day lifestyle, food habits, environmental exposure to toxins along with hereditary predisposition for metabolic syndrome (obesity, hyperlipidemia, Diabetes and hypertension) and stress has contributed to the common problem faced by today's female population, which is PCOD. Children as young as 16 years are diagnosed with polycystic ovarian disease, which occurs due to the imbalances or abnormalities in the hormones. Hormonal abnormalities can make the ovaries produce more eggs. These eggs turn into cysts and the ovaries become large and studded with numerous cysts. It begins as early as in teenagers and mostly effects adult girls of childbearing age.

## 1.2 NEED FOR THE STUDY:

**“Education is given for the sake of individual with a view to save from destruction”**

**Thompson**

Adolescent health plays an important role in a nation's health condition. In India 35% of adolescents are suffering from PCOD it is mainly due to the life style changes. There are two main reasons for the increase of PCOD diagnoses in Indian women, the adoption of unhealthy eating habits and a sedentary lifestyle. Whereas older generations of Indian women eat traditional, lower calorie foods with less sugar. Many young Indian girls today eat a steady diet of junk food. Within the past two decades, India began relying on Westernized diets and lifestyle. It is predicted that they may see up to a six-fold increase in obesity prevalence in the next ten years especially for India who already has the highest rates of diabetes in the world (WHO 2009). The proper awareness helps them in prevention and early identification of PCOD, thereby reducing its complications like diabetes, hypertension and cardiovascular diseases.

Scientific discoveries that improve human health begin with basic research, in which scientists study disease at a molecular or cellular level. Such discoveries then progress to clinical applications that benefit to patients. Basic and clinical research into the causes of polycystic ovarian disease (PCOD) has led to advances in the care of women with this disorder and also prevention and early detection of PCOD. Additional studies have confirmed that women with PCOD have an increased risk of developing metabolic disturbances, including type II diabetes and lipid (blood fat) abnormalities. Women with PCOD also have a high rate of obstructive sleep apnea, a breathing disorder. Researchers have also found that obese women are having a hard time conceiving. If left undiagnosed, PCOD can cause serious complications, including metabolic syndrome and type 2 diabetes. It is also the leading cause of female infertility, and puts women at increased risk of cancers, heart diseases, and stroke and kidney problems. This means PCOD contributes to some of the leading causes of disability in women today<sup>9</sup>.

PCOD affects 7 to 10 percent of women of childbearing age and is the most common cause of infertility. According to The Hormone Foundation, PCOD affects 7 to 10 percent of women of childbearing age and is the most common cause of infertility, affecting 5 to 6 million women in the United States. In India

35% of adolescents are under the influence of PCOD. 80% or more of cases of chronic menstrual irregularity is in reproductive aged women. It is responsible for 15-25% of cases of infertility. Research also suggests that up to 30% of women have some of the symptoms of the disorder without meeting all the criteria for diagnosis (generally requires either irregular or absent periods, and signs of elevated androgens, or male-type hormones). The dramatic increase in childhood obesity leads to earlier onset of menstruation, and thus PCOD is already starting to show up in younger girls. That means more years to live with the damaging health consequences of PCOD<sup>10</sup>.

A multicentre study was conducted among women between the age group of 20 to 40 years, to find the prevalence of obesity in India (Chennai, Bangalore, Hyderabad, Mumbai, Calcutta, and New Delhi) in the year 2000. Study consisted of 800 women. The study found that the prevalence rate of obesity was 31% and a 37.5% prevalence rate of obesity in women with PCOD<sup>11</sup>.

Polycystic ovarian disease (PCOD) is a condition that affects millions of women without their knowledge. Estimates range anywhere from 6 to 20 percent of the female reproductive population, and the number may be even higher among younger women, since infertility is the primary clue that leads to most diagnoses. In fact, PCOD is considered the most common cause of infertility in women today. PCOD usually starts during adolescence, but may not be detected until women are in their late 20s or 30s because it takes a long time for symptoms to develop, and those symptoms vary widely from one woman to the next<sup>12</sup>

Women with PCOS have a higher prevalence and a greater degree of Hyperinsulinemia and insulin resistance. Women who have PCOS, as many as 30% have impaired glucose tolerance (IGT) and an additional 7.5% have diabetes. Even among non-obese women with PCOS, 10.3% have IGT, and 1.5% has diabetes. In long-term follow-up, 16% of women who had been treated for PCOS 20–30 years earlier had developed diabetes by the age of menopause. The etiology of the insulin resistance is unclear, but suppression of the excess androgens does not alter the insulin resistance. Insulin resistance is worsened by the coexistence of obesity, which is also increased in the PCOS population.<sup>4</sup>

It is essential to identify those patients with both PCOS and diabetes not only to tailor their therapies, but also to introduce the appropriate preventive screening and treatment for known cancer risks. The risk of endometrial cancer is increased in type 2 diabetes and in PCOS. In diabetes, epidemiological studies link this risk closely with obesity. In PCOS, obesity, Hyperinsulinemia, and Anovulation have been associated with the increased risk. In addition to regular Pap smears, PCOS therapies have focused on increasing menstrual regularity to decrease this risk. Many mechanisms that decrease insulin resistance also improve menstrual function. All the above statistical reports and studies created an interest in the researcher's mind to undertake a study to assess the effectiveness of structured teaching programme on knowledge regarding prevention and early detection of Polycystic ovarian diseases among adolescent girls in selected pre-university colleges at Tumkur.<sup>5</sup>

Polycystic ovarian syndrome (PCOS) is the 4<sup>th</sup> gynecological problem of hospital admission. About 15 – 20 % of women in reproductive age group are affected by PCOS. A study conducted to understand the magnitude

of polycystic ovarian syndrome (PCOS) with sample size of 257 volunteers who were examined with ultrasonography showed that 22% were found to have polycystic ovaries. Another population study reported that ultrasound scan showed that appearance of polycystic ovaries were present in 20% of women with normal menstrual cycles, in 26–32% with amenorrhea, in 87–90% with oligomenorrhea and in 90–95 % with hirsutism. One more study reported 50% women with recurrent miscarriage had the ultrasound picture of polycystic ovary<sup>6</sup>

Polycystic ovarian syndrome (PCOS) is one of the most common female endocrine disorders. It is one of the leading causes of infertility. Polycystic ovarian syndrome (PCOS) is a major concern in women in their reproductive age. It affects 105 million women worldwide. In 2002 it was estimated that 2 million women were affected with polycystic ovarian syndrome (PCOS) in U.S. The highest prevalence and hirsutism rates are seen in United kingdom, China, New Zealand, south Asian emigrants settled in England and in women of Asian Indian origin.<sup>7</sup>In Australia PCOS appears to be the common cause of oligovulatory infertility affecting 20-35% infertile women .<sup>8</sup>

A cross sectional study was conducted in 2006 on prevalence of polycystic ovarian syndrome (PCOS) in Iranian adolescent girls to assess the predominant features of this disorder. The results shows that out of the 1430 girls , 90 girls were diagnosed with Polycystic ovarian syndrome(PCOS) are found to have acne(31.3%), frontal hair loss(3.1%), dyslipidemia (70%), and obesity(45%) and there is a greater chances in adolescent girls for developing gestational diabetes, pre-eclampsia, preterm labor and prenatal mortality. The study highlights that adolescents have early manifestations of PCOS; therefore it is important to provide education about a change in lifestyle and physical activity at schools and universities which might result in a decrease in future adverse outcomes of the syndrome, both at the family and social level.<sup>9</sup>

In India, the prevalence of PCOS in adolescence is 9.13 %. India has witnessed about 30% rise in PCOS cases in the last couple of years. This draws attention to the issue of early diagnosis in adolescent girls. In Karnataka, incidence of PCOS among adolescent is estimated to be 11-26%.<sup>10</sup>

A study was conducted on prevalence of polycystic ovarian syndrome (PCOS) in India among 136 adolescent girls between 15 and 17 years of age. The study highlights that 36% of adolescent girls are found to have PCOS due to irregular menses (59.9%), hirsutism (56.3%), acne (17.8%), obesity (17.3%), polycystic ovaries on ultrasound (47.8%) and clinical hyperandrogenism (56.1%). The study concludes that screening for menstrual irregularity, obesity and signs of clinical hyperandrogenism are essential for early diagnosis of PCOS in an effort to improve the reproductive health of adolescent girls.<sup>11</sup>

A study conducted in Bangalore, identified an increasing number of adolescent girls in the city are falling prey to Polycystic ovarian syndrome (PCOS). The study result shows that Incidences of Polycystic ovarian syndrome (PCOS) have increased from 5% to 20 % among adolescent girls over the last five to eight years. Incidence of Polycystic ovarian syndrome (PCOS) is increasing may be because of food habits, lifestyle changes, or rising environmental pollution. It's the frequent cause of infertility. The study highlights that

some polycystic ovarian syndrome (PCOS) symptoms may be of concern, especially in adolescent girls. Education and support are important in helping young women with the physical and psychological aspects of PCOS.<sup>12</sup>

A study was conducted on effects of lifestyle management on prevention of polycystic ovarian syndrome (PCOS) in obese adolescent girls. A sample of 59 obese girls between age group 12-18 yr was included in the study and intervention was a 1-year lifestyle management based on diet, exercise training and behavior therapy. The study result shows that 26 girls had reduced body mass index improved most CRF(cardio respiratory fitness) and decreased their IMT(intimae medial thickness) also testosterone concentrations decreased and SHBG(sex hormone binding globulin) concentration increased significantly in girls with weight loss. The prevalence of amenorrhea and oligomenorrhea decreased in the girls with weight loss. The study concludes that weight loss due to lifestyle management is effective to treat menses irregularities, normalize androgens and improve CRF and IMT in obese adolescent girls with PCOS.<sup>13</sup>

Polycystic ovarian syndrome is the most common cause of Anovulation/ oligoovulation among women of reproductive age. A study was conducted to assess adolescent perception and awareness about polycystic ovarian syndrome (PCOS) by a computer based research. In this study, 657 adolescent girls were included. Physicians were the most common provider of PCOS information by questioners, which was configured, concludes that there is a greater need for education among polycystic ovarian syndrome among adolescent girls.<sup>15</sup>electronically for all study participants, irrespective of age. The study highlights that most of the girls had negative emotions with PCOS and these girls approached obstetrician-gynecologist for want of PCOS education. The results shows that patient had emotional disturbances associated with PCOS such as "frustration" (67%), "anxiety" (16%), "sadness" (10%), and "indifference"(2%)<sup>14</sup>

### **1.3 STATEMENT OF THE PROBLEM**

“A study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD ) among adolescent girls in selected schools of Indore (M.P.)

### **1.4 OBJECTIVES OF THE STUDY**

1. To assess the pre-test knowledge score regarding (PCOD) among adolescents girls.
2. To assess the post test knowledge score regarding PCOD among adolescents girls.
3. To determine the effectiveness of structure teaching programme regarding PCOD in terms of knowledge score among adolescents girls.
4. To find the association between pretest knowledge score with the selected demographic variables.

### **1.5 OPERATIONAL DEFINITION**

- **ASSESS** – According to “OXFORD dictionary Assess means to evaluate the value of quality.
- In this study, assess means to evaluate the effect of structure teaching programme.

- **EFFECTIVENESS** – According to “OXFORD dictionary Effect means checking for desired effect of intended result or outcome.
- In this study , Effect refers, to the extent to which structure teaching programme will provide increase in knowledge of PCOD among the adolescents girls in selected school of Indore (M.P)
- **STRUCTURED TEACHING PROGRAMME:** According to “OXFORD dictionary” structure teaching programme means ,giving systematic information about the procedure or topic ( In this study structure teaching means giving a structural teaching prepared the investigation regarding knowledge on PCOD among the adolescents girls in selected school of Indore (M.P) )
- **KNOWLEDGE** – According to “OXFORD dictionary Knowledge means, person’s range of information.
- In this study, knowledge means information acquired through structure teaching.
- **POLYCYSTIC OVARIAN DISEASE** – According to “MEDICAL dictionary” It is a medical condition in which women produce a surplus of androgen. This causes irregular ovulation, or even a lack of ovulation.
- In this study PCOD refers to the disease condition in which amenorrhea and dysmenorrhea of adolescents girls.
- **ADOLESCENTS GIRLS** – according to “NURSES dictionary” the period between puberty and maturity in the female, 12- 21 years.
- Refers to girls between the age group of 15-17 years studying in selected schools of Indore (M.P).
- **SCHOOL** – According to “OXFORD dictionary schools refers to an established organization of foundation specially one dedicated to evaluate.
- In this study schools refers to sunshine higher secondary school and chhatrapati shivaji higher secondary school of Indore where study was been conducted.

## **1.6 ASSUMPTION**

1. School going girls possess some knowledge regarding polycystic ovarian disease.
2. School girls have some knowledge regarding irregular menstruation.
3. The structured teaching programme on PCOD will enhance relevant knowledge of adolescent girls regarding PCOD.

## **1.7 HYPOTHESIS**

**H<sub>1</sub>** – There will be significant difference between pre test knowledge scores regarding PCOD among adolescent girls at the level of  $P \leq 0.05$

**H<sub>2</sub>** – There will significant association between pre test knowledge scores regarding PCOD among adolescent girls with their selected demographical variables at the level of  $P \leq 0.05$

## **1.8 DELIMITATION**

1. A study is delimited to the adolescents girls in selected schools of Indore (M.P)
2. The study is delimited to adolescent's girls who are available during data collection and willing to participate in the study.
3. Students girls who are studying in class X-XII
4. Students girls who are in the age group of 15 – 17
5. The study is delimited to the girls who have attained their menarche.

## **1.9 ETHICAL AND LEGAL ASPECTS**

The written permission was

1. Obtained to conduct the study from the administrator authorities of the school.
  2. The procedure and purposes of the study was explained in detail to each participant included in the study and informed consent was obtained.
  3. Approval from ethical committee was obtained.
- .Confidentiality was maintained by assigning codes to each subject.

The study was beneficial for the adolescence girls on increasing the knowledge on PCOD.

## **1.10 CONCEPTUAL FRAME WORK**

Conceptual framework is a theoretical approach .To study of problems that are scientifically based and emphasizes the selection and clarification of its concepts. Interrelated concepts or obstructions that are assembled together in some rational scheme by virtue of their relevance to a common theme are rethreaded to as conceptual framework (Polite and Hungler 2005). Finally, conceptual frame work sever as a guide to a systematically identifying logical, precisely defined relationship among variables (Potter & Perry 2005)

The present study aimed at assessing effectiveness of structure teaching programme on knowledge of adolescence girls regarding the PCOD, it aim to improve the knowledge of adolescence girls. The conceptual framework of the present study was developed by the investigator based on modified Bertalanffy's general system Theory. (1468).This consists of component like input, throughput, output, feedback modified Bertalanffy's general system theory (1468).describes a set of interaction components of a boundary that filters the types and rate of exchange of energy, material and information with the environment.

### **INPUT-**

It is considered to be the information regarding PCOD to adolescent girls in selected school of Indore (M.P.) Planned health teaching on PCOD, Structure teaching programme on PCOD, Introduction, definition of PCOD, Anatomy & physiology, etiology of PCOD, causes diagnostic evaluation and management of PCOD.

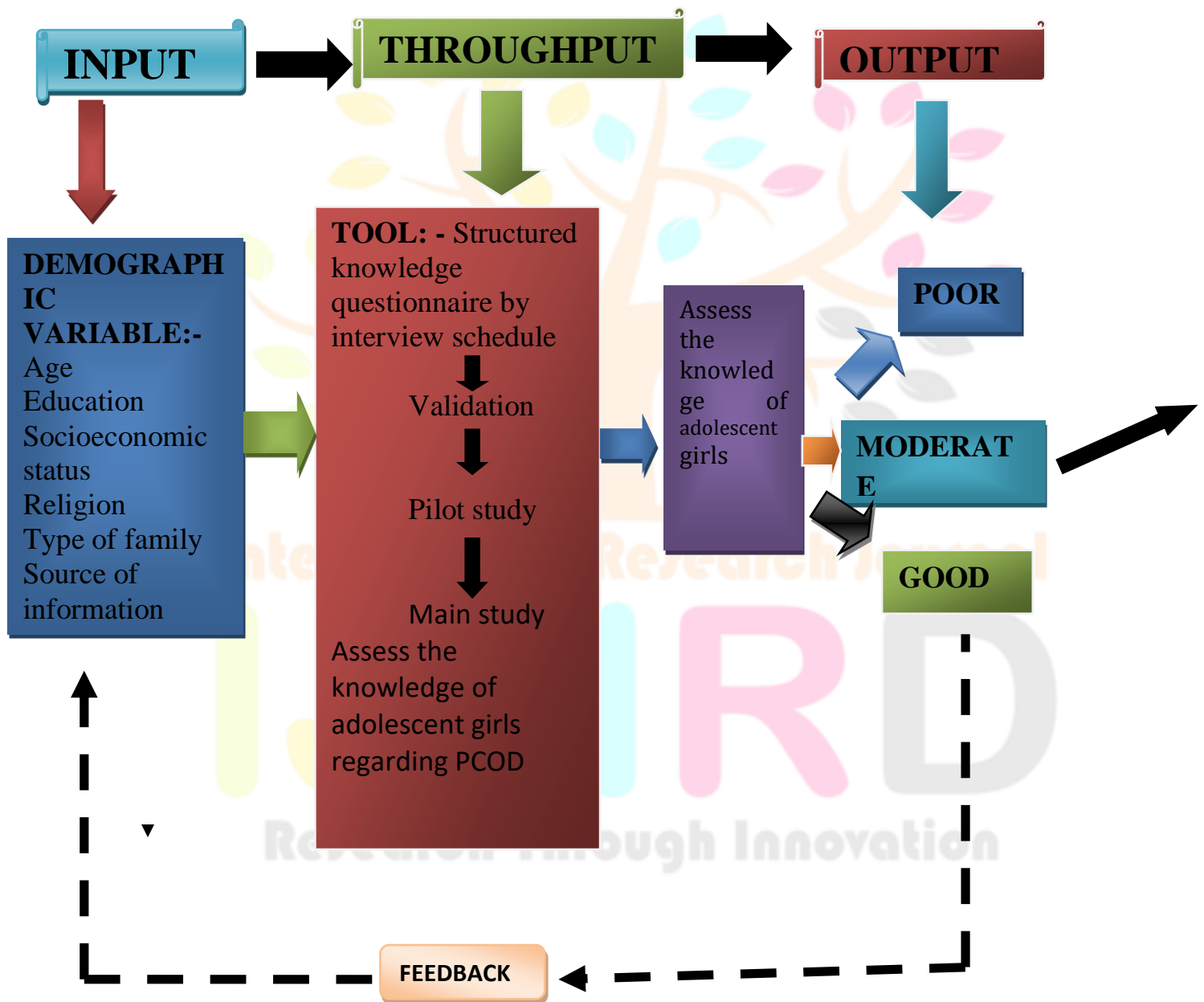
**THROUGH PUT-**

According to VON LADWIG BERTANLAFFY “Through put” is defined as the process by which the system process input and release output in this study, the through input considered for processing the input are:

- Pretest by using questionnaire on PCOD among adolescent girls in selected school of Indore.
- Group teaching by planned health teaching on PCOD among adolescent girls.

**OUTPUT:**

According to the system theory “output” refers to the energy, matter and information that leave the system .In the present study “output” considered the gain in knowledge obtained through the processing of the post test. If will be received in the form of post test knowledge scores.



**NOTE: FEEDBACK NOT INCLUDE IN THE STUDY**

## **SUMMARY**

This chapter has deal with the statement of the problem, objective, operational definition, assumption, hypothesis and limitation.

## **CHAPTER – II**

### **REVIEW OF LITERATURE**

“Review of literature is an essential activity of scientific research project;

“Literature review involves system identification, location securing ad summary of written material that information on research problem”

Review of literature of the present study was arranged in the following heading:

Review related to prevalence

Review related to quality of life

Review related to treatment

### **Review related to treatment**

**Legro RS<sup>1</sup>, Brzyski RG, Snyder P, Ohl D, Santoro N, 2014 Jul** conducted a study on Letrozole versus clomiphene for infertility in the polycystic ovary syndrome, England. Women who received letrozole had more cumulative live births than those who received clomiphene (103 of 374 [27.5%] vs. 72 of 376 [19.1%],  $P=0.007$ ; rate ratio for live birth, 1.44; 95% confidence interval, 1.10 to 1.87) without significant differences in overall congenital anomalies, though there were four major congenital anomalies in the letrozole group versus one in the clomiphene group ( $P=0.65$ ). The cumulative ovulation rate was higher with letrozole than with clomiphene (834 of 1352 treatment cycles [61.7%] vs. 688 of 1425 treatment cycles [48.3%],  $P<0.001$ ). There were no significant between-group differences in pregnancy loss (49 of 154 pregnancies in the letrozole group [31.8%] and 30 of 103 pregnancies in the clomiphene group [29.1%]) or twin pregnancy (3.4% and 7.4%, respectively). As compared with clomiphene, letrozole was associated with higher live-birth and ovulation rates among infertile women with the polycystic ovary syndrome.

**Abd Elgafor 2013 Jul;** conducted a study to compare the hormonal-metabolic profiles and reproductive outcomes between women receiving metformin plus letrozole and women undergoing bilateral ovarian drilling in clomiphene citrate (CC)-resistant women with polycystic ovary syndrome (PCOS) Turkey. In this randomized study, 146 patients were randomly allocated into group 1 ( $n = 73$ ) who received metformin plus letrozole, and group 2 ( $n = 73$ ). There was significant reduction in testosterone ( $p \leq 0.001$ ), fasting insulin ( $p \leq 0.001$ ), and fasting glucose/fasting insulin ratio ( $p = 0.029$ ) in metformin plus letrozole group, while there was significant reduction in FSH, LH and LH/FSH ratio in bilateral drilling group ( $p \leq 0.001$ , 0.001 and 0.001). No significant difference in cycle regularity ( $p = 0.82$ ), ovulation ( $p = 0.24$ ), pregnancy rate ( $p = 0.32$ ) and abortion rate ( $p = 0.51$ ) between both groups. Metformin plus letrozole and bilateral ovarian drilling are

similarly effective as second-line strategies for the treatment of women with PCOS who do not conceive with CC.

**Hajishafiha M<sup>1</sup>, Dehghan M<sup>2</sup>.2013 Dec.** conducted a study on Combined letrozole and clomiphene versus letrozole and clomiphene alone in infertile patients with polycystic ovary syndrome, Bangladesh. One hundred enrolled patients underwent 257 cycles of a combination of letrozole and clomiphene, in which 213 were able to form the dominant follicle (82.9%) and 44 were unable to do so (17.1%). The number of mature follicles was  $2.3 \pm 1.1$ . The mean endometrial thickness in patients on the day of human chorionic gonadotropin administration was  $8.17 \pm 1.3$  mm. The pregnancy rate was 42%. According to the results of this study; it can be proposed that in PCOS patients resistant to clomiphene and letrozole used as single agents, a combination of the two drugs can be administered before using more aggressive treatment that may have severe complications or surgery ovulation.

**Baran S<sup>1</sup>, Api M, Goksedef BP, Cetin 2012** conducted a study To compare the efficacy of metformin and clomiphene citrate (CC) therapies for ovulation induction in anovulatory infertile women with polycystic ovary syndrome (PCOS), Malaysia. The women were prescribed either 1,700 mg/day metformin or CC with a starting dose of 50 mg/day up to 150 mg/day for a period of six consecutive cycles. Metformin group had lower rates of ovulation when compared with CC group (32.3 vs. 60.6%, respectively;  $p = 0.004$ ). There was no statistical difference in pregnancy rates per cycle between the treatment groups (8 vs. 11.7%, respectively;  $p = 0.33$ ) leading to similar cumulative pregnancy rates (36.6 vs. 35.4%, respectively;  $p = 0.45$ ). No difference was observed among the abortion rates (10 vs. 10%, respectively;  $p > 0.05$ ) between the groups. Although metformin and CC are two effective first-line approaches for improving pregnancy rates in anovulatory PCOS women, CC is associated with higher rates of ovulation.

**Zeinalzadeh M<sup>1</sup>, Basirat Z, Esmailpour M 2012** Conducted a study to compare the efficacy of letrozole with clomiphene citrate for ovulation induction in patients with polycystic ovarian syndrome (PCOS), Orissa. In this clinical trial, 107 infertile patients with PCOS received either 100 mg clomiphene citrate ( $n = 57$ ) or 5 mg letrozole ( $n = 50$ ) daily since day 3-7 of their menstrual cycle. Human chorionic gonadotropin (HCG) was administered at a dose of 10,000 IU when at least 1 mature follicle was detected. A single intrauterine insemination was performed 34 hours later. Then the size, number and growth rate of follicles, ovulation rate, endometrial thickness and pregnancy rate were measured in both groups. The number and the size of mature follicles were similar between the 2 groups. The pregnancy rate in letrozole group was higher than that in the clomiphene group (20% vs. 14%), but the difference was not significant ( $p = 0.286$ ). In letrozole group, 86% of patients developed mature follicles, all showing ovulation, whereas 72% of patients in clomiphene citrate group developed mature follicles ( $p = 0.07$ ). Letrozole might be an acceptable alternative to clomiphene citrate to induce ovulation and pregnancy in PCOS patients.

**Johnson N<sup>1</sup>. 2011 Apr** conducted a study to Metformin is a reasonable first-line treatment option for non-obese women with infertility related to anovulatory polycystic ovary syndrome--a meta-analysis of randomized trials Australian and New Zealand Journal of Obstetrics and Gynecology. Primary outcomes were clinical pregnancy and live birth. kg/m<sup>2</sup>, clinical pregnancy rates were 36.7% (52/142) for metformin and

35.7% (51/143) for clomiphene; live birth rates were 30.3% (43/142) for metformin and 30.8% (44/143) for clomiphene.30-32≤For women with BM The available randomized trial data show no significant difference in effectiveness of metformin versus clomiphene as ovulation induction agents for non-obese women with anovulatory PCOS. Metformin and clomiphene are both suitable options for first-line treatment.

**Abdellah MS<sup>1</sup>. 2011 Jun; 11** conducted a study on Comparison of clomiphene citrate, metformin, or the combination of both for first-line ovulation induction, achievement of pregnancy, and live birth in Asian women with polycystic ovary syndrome: In the present prospective randomized trial, 140 women. On the days of the HCG injection, women in the letrozole group had a significantly thicker endometrial than those in the LOD group ( $P < 0.0001$ ). Women receiving letrozole had a higher pregnancy rate (35.7% versus 28.6%) and a lower rate of spontaneous abortion (8.0% versus 20.0%, respectively), but these differences were not statistically significant. Letrozole seems to be a suitable second-line ovulation-inducing alternative to LOD in women with PCOS who do not conceive with clomiphene citrate.

**Abu Hashim H<sup>1</sup>, Shokeir T, Badawy A Fertil Steril. 2010 Sep; 3Dec**, conducted a study on Letrozole versus combined metformin and clomiphene citrate for ovulation induction in clomiphene-resistant women with polycystic ovary syndrome Department of Obstetrics, Mansoura University, Mansoura: a randomized controlled trial .Two hundred fifty anovulatory women (582 cycles) with CC-resistant PCOS .Patients received 2.5 mg of letrozole daily (123 patients, 285 cycles) or combined metformin-CC (127 patients, 297 cycles) for three treatment cycles. The total number of follicles was significantly more in the combined metformin-CC group ( $4.4 \pm 0.4$  vs.  $6.8 \pm 0.3$ ). No statistically significant difference regarding the pregnancy rate (PR) was observed between both groups (14.7% vs. 14.4%).

**Zain MM<sup>1</sup>, Jamaluddin R, Ibrahim A, Norman RJ 2009** conducted a study to Comparison of clomiphene citrate, metformin, or the combination of both for first-line ovulation induction, achievement of pregnancy, and live birth in Asian women with polycystic ovary syndrome in Kedah, Malaysia. a randomized controlled trial. These patients were assigned to three groups: group 1 (38 patients) received 500 mg of metformin three times a day; group 2 (39 patients) received clomiphene citrate (CC) at an incremental dose; group 3 (38 patients) received both medications. The ovulation rate was 23.7% in the metformin group, 59% in the CC group, and 68.4% in the combination treatment group.

**Nahid L<sup>1</sup>, Sirous K.2007** conducted a study to compare the effects of Letrozole and Clomiphene citrate for ovulation induction in women with PCOS center khorramabad, Iran. This intervention is a clinical trial study carried out on 100 infertile women with polycystic ovary syndrome who were referred to gynecologist's office and Oslan hospital. Twenty-three cases (46%) in group receiving clomiphene citrate had thin endometrium and thin endometrium was observed in 1 case (2%) of group receiving letrozole. Among 50 subjects who received clomiphene citrate, 10 people (20%) reported blurred vision, 9 patients (18%) headache, 6 patients (12%) nausea and 2 patients (4%) reported vomiting and one (2%) twin pregnancies was observed, but no complications were reported in group receiving letrozole. This study showed that stimulation of letrozole and

clomiphene citrate on ovulation. Based on these findings letrozole can be considered an appropriate alternative for clomiphene citrate without side effects.

**Nawaz FH<sup>1</sup>, Rizvi J. Gynecol Obstet Invest. 2010** conducted a study on Continuation of metformin reduces early pregnancy loss in obese Pakistani women with polycystic ovarian syndrome. This case-control study was conducted from March 2005 to March 2008 in the infertility and antenatal clinics of the Department of Obstetrics and Gynecology of Aga Khan University Hospital, Karachi, Pakistan. A total of 197 infertile women with PCOS were included. It was found that continuation of Metformin during pregnancy reduces EPL, i.e. 8.8 vs. 29.4% in cases and controls, respectively ( $p < 0.001$ ). In the subset of women with a prior history of miscarriage, the pregnancy loss rate was 12.5% in the Metformin versus 49.4% in control group ( $p = 0.002$ ). Metformin continuation during pregnancy significantly reduces EPL in women with PCOS. IR may play a significant role in EPL.

**Jeans YM et al (2009)** conducted a study on related to dietary management of women with polycystic ovary syndrome, Iran. Advice provided by dietitians focused on a reduction in energy intake (78%) and dietary glyco-genic index (77%) often in combination. Of the women with poly cystic ovarian syndrome that were following a diet specifically for their poly cystic ovarian syndrome (57%) regimes included a low glyco-genic index (34%), weight loss diets (16%) or a combination (26%). Of interest, 73% of overweight women were not following a diet with only 15% of women having seen a dietitian. A consensus statement of evidence-based dietary advice for women with polycystic ovarian syndrome is needed and would be a useful resource for dietitians.

**Badawy A<sup>1</sup>, Abdel Aal I, Abulatta M. Fertil Steril. 2009 Sep** conducted a study on Clomiphene citrate or letrozole for ovulation induction in women with polycystic ovarian syndrome: a prospective randomized trial. University teaching hospital and private practice setting Department of Obstetrics and Gynecology, Mansoura University. The total number of follicles was statistically significantly greater in the clomiphene citrate group (6.8 +/- 0.3 versus 4.4 +/- 0.4). Endometrial thickness at the time of hCG administration was statistically significantly greater in the CC group (9.2 +/- 0.7 mm versus 8.1 +/- 0.2 mm). The duration to reach a dominant follicle was statistically significantly longer in the letrozole group (12.1 +/- 1.3 versus 8.8 +/- 2.9 days). Ovulation occurred in 365 out of 540 cycles (67.5%) in letrozole group and 371 out of 523 cycles (70.9%) without a statistically significant difference. The results of this study did not show any advantage to the use of letrozole over clomiphene citrate as a first-line treatment for induction of ovulation in women with PCOD.

**Jamaluddin R, Ibrahim A, Norman RJ. 2009** conducted a study on Comparison of clomiphene citrate, metformin, or the combination of both for first-line ovulation induction, achievement of pregnancy, and live birth in Asian women with polycystic ovary syndrome: a randomized controlled trial. Randomized controlled trial .One hundred fifteen newly diagnosed patients with PCOS based on ESHRE/ASRM criteria. The ovulation rate was 23.7% in the metformin group, 59% in the CC group, and 68.4% in the combination treatment group. This was translated into a similar PR and live birth rate, which were higher in the CC and combination groups compared to the metformin group (PR: 7.9%, 15.4%, and 21.1%; live birth rate: 7.9%,

15.4%, and 18.4% in metformin, CC, and combination treatment groups, respectively), although statistically the differences were not significant. Clomiphene citrate should be the first-line treatment for ovulation induction in anovulatory patients with PCOS.

**Palomba S<sup>1</sup>, Falbo A, Battista L, Russo T, Venturella R, Tolino A, Orio FZullo FAm J 2010** conducted a study on Laparoscopic ovarian diathermy vs. clomiphene citrate plus metformin as second-line strategy for infertile anovulatory patients with polycystic ovary syndrome: a randomized controlled trial, India. Fifty primary infertile patients with CC-resistant PCOS were assigned randomly to receive LOD followed by a 6-month observation (group A) or 6-cycle course of CC plus metformin (group B). Reproductive and safety outcomes were analyzed. No significant difference between 2 groups in pregnancy (15/92 women [16.3%] vs 14/107 women [13.1%];  $P = .521$ ) and live-birth (13/92 women [14.1%] vs 12/107 women [11.2%];  $P = .536$ ) rates per cycle was observed. With the use of a Cox regression analysis, patients under medical treatment, compared with patients who received surgical treatment, had a relative risk of pregnancy of 1.2 (95% confidence interval, 0.61-2.44;  $P = .582$ ) and a relative risk of live-birth of 1.4 (95% confidence interval, 0.63-2.96;  $P = .425$ ). LOD and CC plus metformin seem to be 2 effective approaches to treat infertility in patients with CC-resistant PCOS.

**Karateke A. J Int Med Res. 2006** conducted a study on Comparison of letrozole and clomiphene citrate in women with polycystic ovaries undergoing ovarian stimulation, Netherland Letrozole was compared with clomiphene citrate (CC) as a first-line treatment for ovulation induction in women with polycystic ovaries (PCOs). 106 women with primary infertility and a diagnosis of PCOs were randomized to receive either 100 mg CC ( $n = 55$ ) or 2.5 mg letrozole ( $n = 51$ ) daily for 5 days. Human chorionic gonadotrophin (hCG) at a dose of 10000 IU was administered when at least one follicle with a mean diameter  $> \text{ or } = 18$  mm was observed using transvaginal ultrasound. In conclusion, letrozole is associated with a higher pregnancy rate than CC in PCO patients and may have a role as a first-line treatment for anovulatory patients with PCOs.

**Saleh AM<sup>1</sup>, Khalil HS. Acta Obstet Gynecol Scand. 2004** conducted to study on Review of nonsurgical and surgical treatment and the role of insulin-sensitizing agents in the management of infertile women with polycystic ovary syndrome, Asia. The search term of sub fertile women with an ovulation and PCOS was used for identification of randomized controlled trials. It was estimated that 75-80% of anovulatory PCOS women will respond to clomiphene citrate (CC) and 35-50% will achieve pregnancy. For CC-resistant PCOS women (20-25%), CC + metformin (1.5 g/day) for 3-6 months has a 70% chance of restoration of regular menses and ovulation, and a 23% chance of pregnancy. There was no statistically significant difference in the ovulation rate following LOD with electro coagulation and laser [83% vs. 77.5%; odds ratio (OR) 1.4; 95% CI 0.9-2.1], while there was a significantly higher cumulative pregnancy rate at 12 months after surgery (65% vs. 54.5%; OR 1.5; 95% CI 1.1-2.1). Diet and exercise followed by CC should be used for nonsurgical ovulation induction. For CC-resistant PCOS women, metformin may be included in a stepwise approach before a surgical approach. LOD with electrocautery is superior to laser drilling and gonadotropin therapy.

**Farquhar CM<sup>1</sup>, Williamson K, 2002 aug** conducted a study on randomized controlled trial of laparoscopic ovarian diathermy versus gonadotropin therapy for women with clomiphene citrate-resistant polycystic ovary syndrome, UK. Randomized controlled trial. A tertiary referral fertility clinic. Inclusion criteria were age of <39 years, body mass index of <35 kg/m<sup>2</sup>, failure to ovulate with 150 mg of clomiphene citrate for 5 days in the early follicular phase, >12 months of infertility, and no other causes of infertility. Cumulative pregnancy and miscarriage rates. Cumulative pregnancy rates were 28% at 6 months for laparoscopic ovarian diathermy and 33% for three cycles of ovulation induction with gonadotropins. Women in the laparoscopic ovarian diathermy arm of the study had four additional spontaneous pregnancies 6 to 12 months after surgery. There was no statistically significant difference in pregnancy or miscarriage rates during the 6-month follow-up period or the three cycles. Laparoscopic ovarian diathermy is a safe and effective alternative to ovulation induction with gonadotropin.

**Johnson NP<sup>1</sup>, Stewart AW, 2010 Jul**, conducted a study on PCOSMIC: a multi-centre randomized trial in women with Polycystic Ovary Syndrome evaluating Metformin for Infertility with Clomiphene, Iran. Ovulation induction treatment with metformin, either alone or in combination with clomiphene citrate (CC), remains controversial even though previous randomized trials have examined this. Women with high body mass index (BMI) > 32 kg/m<sup>2</sup> received placebo ('standard care') or metformin; women with BMI < or = 32 kg/m<sup>2</sup> received CC ('standard care'), metformin or both. Treatment continued for 6 months or until pregnancy was confirmed. Primary outcomes were clinical pregnancy and live birth, For women with BMI > 32 kg/m<sup>2</sup>, clinical pregnancy and live birth rates were 22% (7/32) and 16% (5/32) with metformin, 15% (5/33) and 6% (2/33) with placebo. For women with BMI < or = 32 kg/m<sup>2</sup>, clinical pregnancy and live birth rates were 40% (14/35) and 29% (10/35) with metformin, 39% (14/36) and 36% (13/36) with CC, 54% (19/35) and 43% (15/35) with combination metformin plus CC. No evidence of benefit of metformin over placebo. For women with BMI < or = 32 kg/m<sup>2</sup> there is no evidence of significant differences in outcomes whether treated with metformin, CC or both.

**Diamanti-Kandarakis E<sup>1</sup>, Economou F, Palimeri S, Christakou C. Ann N Y Acad Sci. 2010 Sep** conducted a study on Metformin in polycystic ovary syndrome, New York. Polycystic ovary syndrome (PCOS) affects 6.6-6.8% of women in reproductive age. Insulin resistance and hyperinsulinemia play a critical role in the pathogenesis of PCOS and are associated with a high risk for type 2 diabetes mellitus and cardio metabolic abnormalities. Metformin has been introduced as a therapeutic option in PCOS, targeting of cardio metabolic and reproductive abnormalities on the basis of its action on the reduction of glucose levels and the attenuation of insulin resistance. The tissue-specific actions of metformin as well as the molecular mechanisms involved in the liver, the muscle, the endothelium, and the ovary are elucidated in this review. The use of metformin in pregnant women with PCOS is another of its positive features. Overall, available data supports the therapeutic usefulness of metformin on cardio metabolic risk and reproduction assistance in PCOS women.

**Steiner CA<sup>1</sup>, Janez A, Jensterle M, Reisinger K, Forst T, Pfützner A. J Diabetes Sci Technol. 2007 Mar**; conducted a study on Impact of treatment with rosiglitazone or metformin on biomarkers for insulin resistance and metabolic syndrome in patients with polycystic ovary syndrome 1 Gettysburg College, Gettysburg,

Pennsylvania, USA. Thirty-five women with clinically confirmed PCOS diagnosis were included in the study [age (mean $\pm$ -SD): 24.7 $\pm$ -4.8 years; body mass index: 27.4 $\pm$ -6.0 kg/m<sup>2</sup>]. Adiponectin levels increased in both treatment arms (metformin: 8.6 $\pm$ -3.3 to 16.7 $\pm$ -7.2 mg/liter,  $p < 0.001$ ; rosiglitazone: 8.2 $\pm$ -3.5 to 26.2 $\pm$ -9.5 mg/liter,  $p < 0.001$ ), but the increase was more pronounced with rosiglitazone ( $p < 0.001$ ). While no changes of visfatin concentrations were observed during rosiglitazone therapy (15.4 $\pm$ -6.9 ng/ml vs 17.4 $\pm$ -4.8 ng/ml, n.s.), there was an increase in the metformin treatment arm (11.9 $\pm$ -4.0 to 21.8 $\pm$ -8.3 ng/ml,  $p < 0.001$ ). Significant increases demonstrated for RBP4 in both treatment arms were more pronounced in the metformin group (metformin: +66%, rosiglitazone: +33%). All patients were in stage I or II of ss-cell dysfunction and none of them showed increased intact proinsulin levels or changes in resisitn at baseline or end point. . Despite improved insulin resistance, an increase in RBP4 concentration was seen for both drugs. In this study, adiponectin appeared to be the most promising indicator of both metabolic status and therapeutic success.

**De Sloover Koch Y<sup>1</sup>, Ernst ME. Ann Pharmacotherapy. 2001 Dec** conducted a study on use of metformin in polycystic ovary syndrome to review the use of the insulin-sensitizing agent metformin in women with polycystic ovary syndrome (PCOS), Italy. Biomedical literature was accessed through MEDLINE (1996-March 2001) and the Iowa Drug Information Service. Key terms included metformin and polycystic ovary syndrome. Metformin can be beneficial in normalizing menstrual irregularities and stimulating ovulation in previously anovulatory women. Metformin therapy is well tolerate by the majority of patients and should be considered for use in women with PCOS.

## Review related to quality of life

**Usadi RS<sup>1</sup>, Legro RS. 2012 Dec**, conducted a study on reproductive impact of polycystic ovary syndrome. The purpose of this review is to highlight the impact of polycystic ovary syndrome (PCOS) on menstrual function, fertility and reproductive outcomes, USA. Women with PCOS often present with anovulation, menstrual disturbances and hyperandrogenism. The role of metformin in treating PCOS is narrowing. New data show improved live birth rates a progestin withdrawal bleed and proceeding directly with a dose escalation of clomiphene for ovulation induction. The Pregnancy in PCOS trial II will determine the safety and efficacy of clomiphene citrate compared to letrozole, in achieving live birth in infertile women with PCOS. Initial treatment for reproductive disorders in overweight and obese women with PCOS is weight loss. Clomiphene citrate-resistant women may be offered aromatize inhibitors or laparoscopic ovarian surgery. Metformin does not improve live birth rate or reduce miscarriage rate and is no longer considered an option for ovulation induction. Women with PCOS need to be counseled about risks of multiple gestations with gonadotropin therapy.

**Swanton A<sup>1</sup>, Lighten A, 2011** conducted a study on Do women with ovaries of polycystic morphology without any other features of PCOS benefit from short-term metformin co-treatment during IVF A double blind, placebo-controlled, randomized trial , Iran. This study was a double blind, multi-centre, randomized, placebo-controlled trial. The study population included 134 women with ovulatory PCO. In total, 134 women

were randomized, 69 to metformin and 65 to placebo. There were no statistically significant differences between the two groups in baseline characteristics. With regard to IVF outcome, no significant improvements were found in the metformin group when compared with the placebo group. In particular, there was no difference between the groups in rates of live birth [metformin n = 27 (39.1%), placebo n = 30 (46.2), (95% confidence interval 0.38, 1.49, odds ratio = 0.75)], clinical pregnancy [metformin n = 29 (42.0%), placebo n = 33 (50.8%)] or severe OHSS [metformin n = 6 (8.7%), placebo n = 5 (7.7%)]. There appears to be no benefit in metformin co-treatment before and during IVF in women with PCO without any other features of PCOS.

**Pembe AB, Abeid MS (2009).** Conducted a study on determine prevalence of polycystic ovaries (PCO) and associated clinical and biochemical features among women with infertility attending gynecological outpatients department (GOPD) at Muhimbili National Hospital (MNH) in Dar es Salaam, Tanzania. The mean hirsutism score though was not significant, was higher in women with PCO than in women with normal ovaries (5.1 +/- 2.7 vs. 4 +/- 2.4, P<0.057). Using the Rotterdam criteria 32 (32%) women were diagnosed to have polycystic ovary syndrome (PCOS). Among these women 25 (78.1%) had PCO, 24 (75%) had signs and oligoanovulation, and 18 (56.3%) had hirsutism. Among 68 women with no PCOS, 7 (10.3%) had polycystic ovaries, 15 (22.1%) had signs and oligoanovulation and 6 (8.8%) had hirsutism. In conclusion, polycystic ovaries are common among women with infertility.

**Franceschi R, Gaudino R, et al 2009:** conducted a study on prevalence of polycystic ovary syndrome in young women who had idiopathic central precocious puberty at least 3 years after menarche, Italy. The objective of the study was to look for any predictive factors of polycystic ovary syndrome at the time idiopathic central precocious puberty when diagnosed. 46 young women who had been treated with GnRH analogues during childhood, observed at gynecologic age of 6.23 +/- 3.0 years were included in the study. The study revealed that the patients with idiopathic central precocious puberty are prone to develop polycystic ovarian syndrome and increased risk of infertility.

**Danial R, Mishell J R, Arthur L, et al 2000** conducted a study on "Prevalence of PCOS in Women of Reproductive Age", Turkey. 189 healthy women aged between 20-45 years were included in the study. The women were divided into 2 groups, those 35 years of age and younger and those 36 years age and older, on cycle days 1-6 Trans vaginal ultrasound was performed and blood samples were collected. There was 14.2% prevalence of pcos in entire group (27/189). The prevalence was 21.6% in women 35 years and younger and 7.8% in the women 36 years and older. Significantly more irregular cycles were seen in women with pcos than in those with normal (44% v/s 19%). The study result was that in healthy women, the prevalence of pcos varies with age. The binding are more common in women younger than 35 years.

**Robert Lisa Masters 2001** conducted a study on Relative risk of conversion from normoglycaemia to impaired glucose tolerance or non-insulin dependent diabetes mellitus in polycystic ovarian syndrome in Woodville, South Australia Cross-sectional studies have shown a high frequency of impaired glucose tolerance (IGT) and non-insulin dependent diabetes mellitus (NIDDM) in women with polycystic ovarian syndrome (PCOS). Sixty-seven women with PCOS received a 75 g glucose tolerance test and measurement

of lipids at baseline and at follow-up after an average time of 6.2 years. All women followed prospectively had normal glucose tolerance (n = 54) or IGT (n = 13) at the start of the study. Change in glycaemic control from baseline was frequent, with 5/54 (9%) of normoglycaemic women at baseline developing IGT and a further 4/54 (8%) moving directly from normoglycaemic to NIDDM. For women with IGT at baseline, 7/13 (54%) had NIDDM at follow-up . and that the rate of conversion from normal glucose tolerance to IGT or NIDDM, or from IGT to NIDDM is substantial.

**Begum MR<sup>1</sup>, Khanam NN, Quadir E, Ferdous J, Begum MS, Khan F, Begum A June 2002 and December 2006.** Conducted a study on Prevention of gestational diabetes mellitus by continuing metformin therapy throughout pregnancy in women with polycystic ovary syndrome, Permsyuria. This experimental study, Fifty-nine non-diabetic PCOS patients who conceived Twenty-nine of them continued metformin throughout pregnancy and 30 did not the main outcome measure was development of gestational diabetes in women with PCOS and their fetal outcome. Among 29 women who received metformin, gestational diabetes developed during one of 29 pregnancies (3.44%) versus nine of 30 pregnancies (30%) without metformin. The odds ratio for gestational diabetes in women without metformin versus with metformin was 12 (95% confidence interval: 6.20-18.08). All babies born in the metformin group had average birth weight and those in the control group 4 (13.33%) were large for date. In PCOS, use of metformin throughout pregnancy is associated with and might be responsible for a nine-fold reduction (30-3.44%) of gestational diabetes.

**Eijkemans MJ<sup>1</sup>, Imani B, Mulders AG, Habbema JD, Fauser BC. Hum Reprod. 2003 Nov;** conducted a study on High singleton live birth rate following classical ovulation induction in normogonadotrophic anovulatory infertility (WHO 2) Medical induction of ovulation using clomiphene citrate (CC) as first line and exogenous gonadotrophin as second line forms the classical treatment algorithm in normogonadotrophic anovulatory infertility ,Ankara Turkey. Because the chances of success following classical ovulation induction are not well established, a shift in first-line therapy can be observed towards alternative treatment. Cox regression was used to construct a multivariable prediction model. Overall, there were 134 pregnancies ending in a singleton live birth (56% of women). The cumulative pregnancy rate after 12 and 24 months of follow-up was 50% and 71% respectively. Polycystic ovary syndrome (PCOS) patients (49%), clearly non-PCOS patients (13%) and the in-between group did not differ in prognosis (P = 0.9). With a cut-off value of 30% for low chance, the model predicted probabilities at 12 months lower than this cut-off for 25 out of 240 patients (10.4%). Classical ovulation induction produces very good results in normogonadotrophic anovulatory infertility. Alternative treatment options may not be indicated as first-line therapy in these patients, except for subgroups with poor prognosis.

**Massin N<sup>1</sup>, Galey J, Hugues JN. Gynecol Obstet Fertil. 2003 Mar** conducted a study on polycystic ovary syndrome is a frequent endocrine disorder often associated with insulin resistance and Hyperinsulinemia which may play a role in hyperandrogenism and anovulation France. The use of "insulin sensitizing" agents has been suggested to reduce insulin resistance and hyperandrogenism. In that respect, the use of metformin in polycystic ovary syndrome is reviewed. Although its mechanism of action is still unclear, metformin proved to be effective to restore cyclicity and spontaneous ovulation. The synergistic effect of clomiphene citrate and

metformin was demonstrated in some studies, suggesting that metformin could be helpful for women with clomiphene citrate resistance. However, the potential effect of metformin administration for reducing hyper stimulation in women treated with exogenous FSH, or for preventing early miscarriages has to be confirmed. Here, we propose a guideline for the use of metformin, as an adjuvant therapy, to restore cyclicity and ovulation in women with polycystic ovary syndrome.

## Review related to prevalence

**A<sup>1</sup>, Rees DA. Clin Endocrinol (Oxf). 2012 Dec** conducted a study on Lansdowne The sympathetic nervous system in polycystic ovary syndrome: a novel therapeutic target? Polycystic ovary syndrome (PCOS) is a common endocrine condition associated with long-term health risks, including type 2 diabetes and vascular dysfunction in addition to reproductive sequel. Active weight loss can reduce MSNA and whole body noradrenalin spillover, whereas low-frequency electro acupuncture decreased MSNA in overweight women with PCOS. Treatment of OSA with continuous positive airways pressure may reduce plasma noradrenalin levels and diastolic blood pressure and improve cardiac sympathovagal balance. Renal sympathetic enervation also reduced MSNA, noradrenalin spillover and blood pressure in two PCOS subjects with hypertension, accompanied by improved insulin sensitivity. The sympathetic nervous system may thus offer a new therapeutic target in PCOS but larger and longer-term studies are needed before these treatments can be considered in clinical practice.

**Vanky E<sup>1</sup>, DE Zegher F 2012 Dec** conducted a study on the potential of metformin to prevent preterm delivery in women with polycystic ovary syndrome - an epi-analysis Trondheim, Norway. We performed an epi-analysis of two randomized controlled trials. The participants were 313 women aged 18-42 years with PCOS who had singleton pregnancies. They were randomized to metformin or placebo treatment from first trimester until delivery. The metformin-treated patients had less late miscarriage/preterm delivery; five (3%) vs. 18 (11%) in the placebo group ( $p < 0.01$ ). There was no difference in the prevalence of gestational diabetes and preeclampsia between the metformin and the placebo group. In this epi-analysis, metformin treatment during pregnancy seems to reduce early delivery in women with PCOS.

**Omu F E et al 2010** conducted a study to evaluate the incidence, treatment and outcome of patients with polycystic ovarian syndrome at infertility centre in Spain. The sample size of this study was 2270. The study revealed that incidence rate of women suffering from polycystic ovarian syndrome was 46.50% and 77% women underwent polycystic ovarian syndrome, total 44.77% women got pregnant through intrauterine insemination, and 22% women got pregnant through clomiphene polycystic ovarian syndrome.

**Moran L, et.al (2010)** conducted a study on observational, cross - sectional study in young woman. He assesses the psychological features in young women with and without PCOS, USA. Women with PCOS were more likely to perceive themselves as at risk of obesity ( $p=0.012$ ) and infertility ( $p=0.0001$ ), and perceived greater importance in reducing future risk of prediabetes ( $p=0.027$ ), gestational diabetes ( $p=0.039$ ), type2 diabetes ( $p= 0.01$ ), heart disease ( $p=0.005$ ), obesity ( $p=0.0007$ ), and infertility ( $p=0.023$ ) than women without PCOS. Women with PCOS were more likely to have fears about future health related to weight gain ( $p=0.045$ ), loss of femininity ( $p =0.035$ ), loss of sexuality ( $p =0.003$ ) and infertility ( $p=0.019$ ) than women without PCOS. Worsened quality of life, anxiety and depression in young women with PCOS is related to BMI. Risk

perception is appropriately high in PCOS, yet perceived risks of future metabolic complications are less common than those related to weight gain and infertility.

**Cocksedge KA<sup>1</sup>, Li TC, Saravelos SH, Metwally M. 2008 Jul;** conducted a study on reappraisal of the role of polycystic ovary syndrome in recurrent miscarriage, China. The extent to which PCOS contributes remains highly uncertain. Only a very small number of studies have investigated the prevalence of hyperandrogenemia in recurrent miscarriage. Most crucially, to the authors' knowledge, there is not yet a single publication which has investigated the true prevalence of the complete syndrome of PCOS in recurrent miscarriage using the Rotterdam criteria. Hence there is an urgent need to reappraise the prevalence of PCOS in recurrent miscarriage using the Rotterdam criteria. This paper also reviews the possible treatment options for women diagnosed with recurrent miscarriage associated with PCOS. There is some evidence to suggest that weight loss, ovarian drilling and metformin could help to reduce the rate of miscarriage.

**Stankiewicz M<sup>1</sup>, Norman R. Drugs. 2006** conducted a study on Diagnosis and management of polycystic ovary syndrome Australia. a practical guide. Polycystic ovary syndrome (PCOS) is a syndrome, which can be defined as a group of recognizable patterns of symptoms or abnormalities that indicate a particular medical situation. The current definition of PCOS requires the presence of two of the following three conditions: (I) Oligo- and/or anovulation; (ii) clinical and/or biochemical signs of hyperandrogenism; and (iii) polycystic ovaries--and the exclusion of other aetiologies. It is generally accepted that the prevalence of PCOS is approximately 5-10%, and that of polycystic ovaries alone is 21-23%. Other features of PCOS are obesity, insulin resistance, impaired glucose tolerance and type 2 diabetes mellitus, dyslipidemia, cardiovascular disease, obstructive sleep apnoea and infertility. An approach to a patient with possible PCOS should be directed towards making a diagnosis and screening for associated endocrine abnormalities.



## CHAPTER-III

### RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem.

The methodology of research indicates the general pattern of organizing the procedure together with valid and reliable data for problem under investigation. Denish.F.Polit (2009)

This chapter deals with methodology adopted to assess the effectiveness of structured teaching Programme regarding knowledge on PCOD of adolescent's girls in selected school of Indore (M.P.)

The scope of research methodology is wider than that of research method.

Research methodology is not only about the research methods but also consider the logic behind the methods used in the context of research study it includes the research approach, research design, sample size, sampling technique , development of tool, pilot study , data collection, procedure and plan for data analysis and interpretation.

#### RESEARCH APPROACH

Research approach is the description of the plan to investigate the phenomenon under study in a structure (quantitative), structured (quantitative) or a combination of the two methods (quantitative –qualitative integrated approach). Therefore, the approach helps to identify the presence or absence of and comparison between groups. The approach of research study depends on several factors but primarily on the nature of phenomenon understudy.

(S.K. SHARMA 2011)

In order to achieve the objective of the study evaluative approach was considered appropriate. The main goal is to assess the success of a programme.

The purpose of the study is to assess the effectiveness of structured teaching programme regarding knowledge g on PCOD in adolescent's girls in selected school Indore (M.P.)

#### RESEACH DESIGN-

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

S.K.sharma (2011).

The research design select for this study will be group pre-test, post-test design because this study is measure the gains and check the knowledge of PCOD among adolescent girls in selected school Indore (M.P.)

The design can be presented as-

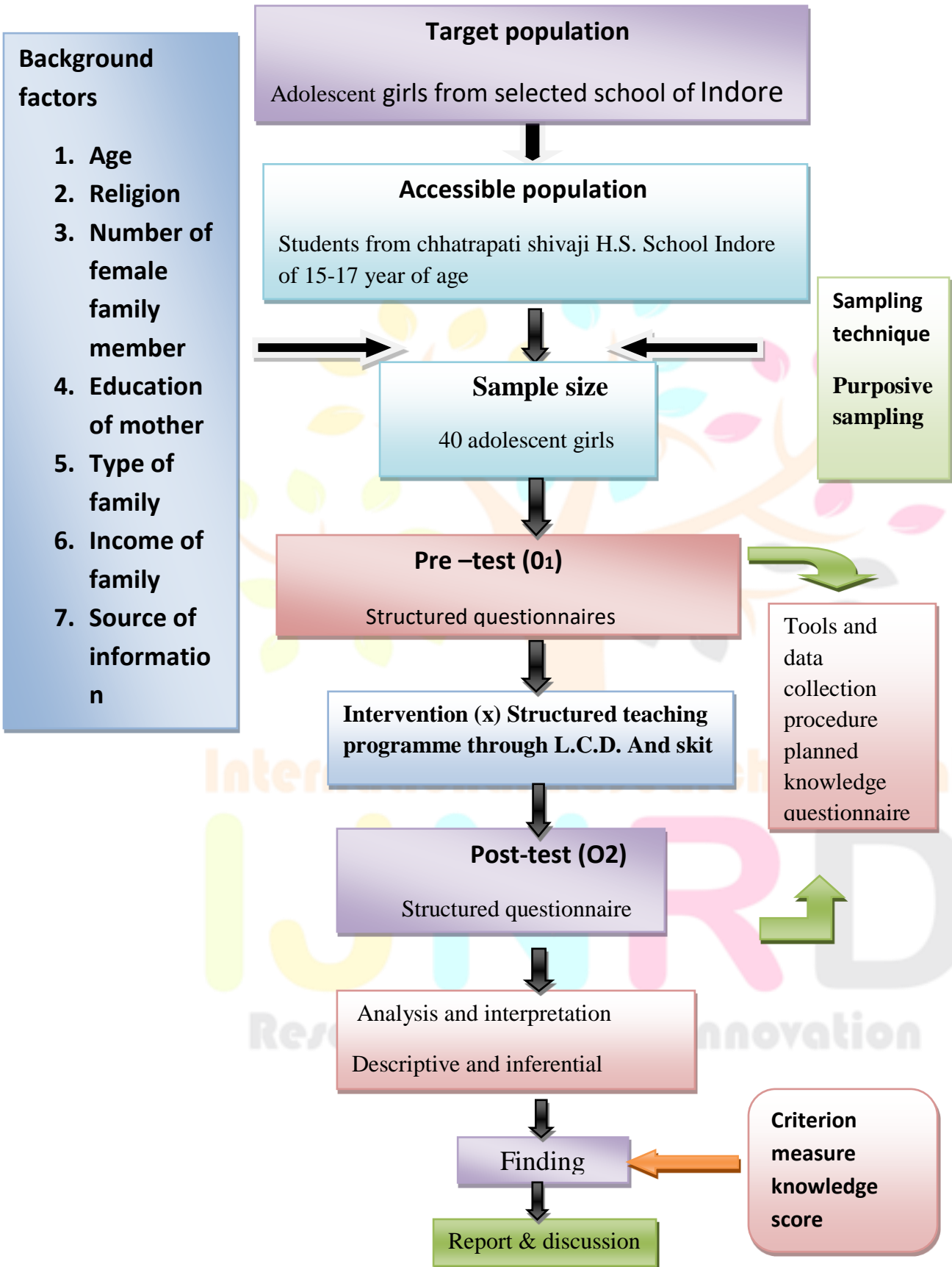


Fig.2: one group pretest, posttest design

O1 – pre-test of knowledge on PCOD

X – Implementation of structure teaching programme

O2 – post- test of knowledge on PCOD.



**Figure -3.2 schematic presentation of research design**

**In figure no 3.2:-** by purposive sampling 40 adolescent girls were selected and questionnaire was prepared to assess the knowledge of girls. Structure teaching programme based on the review of literature and discussion with experts.

Knowledge questionnaire and context of Structure teaching programme was prepared based on blue print tools was validated by experts and reliability was established by test and retest method.

Pretest was conducted by administration questionnaire to measure the knowledge of adolescent girls on first day regarding PCOD.

Implementation or administration of Structure teaching programme was done just after the pre-test on first day.

Posttest was conducted using same tools on the seventh day

Criterion measure through posttest knowledge score.

Analysis and interpretation of collected data was done to find the association between knowledge with the selected demographic variable. At last reporting the thesis.

### **Variables under study**

Variables are the condition or character that the investigator observes, manipulates or control.

### **Two types of variable are identified:-**

1. **INDEPENDANT VARIABLE** – the researcher manipulates the independent variable. It is the intervention or treatment that the researcher performs to see the change in resulting change on dependent variable.
2. **DEPENDENT VARIABLE:** - The dependant variable usually is the variable that the researcher is interested in understanding explaining or predicting. it is the outcome variable which is measured or observed followed the instruction of independent variable. The present study gain in knowledge regarding PCOD among adolescent girls.

### **RESEARCH SETTING**

The physical location and conditions in which the data collection takes place is a study in the setting. Settings are the more specific places. The settings for the present area were:

Sun shine higher secondary school, Indore (M.P.)

Chhatrapati shivaji higher secondary school, Indore (M.P.)

## THE POPULATION

According to 'Polit & hungler' population is the entire aggregate of the cases that meet a designated set of criteria. The study population consists of 40 adolescent girls from selected school of Indore.

### Target population:-

Polit & hungler states that the target population is the entire aggregate of the cases about which the researcher would like to make generalization. The target population n this study includes 40 adolescent girls.

**Accessible population:** - refers to the target portion of target population to which the research has reasonable access.

In the study the accessible population includes the adolescent girls in selected of Indore of 15-17 years.

## THE STUDY DESIGN COMPRISES OF THREE PHASES

- The phase I deal with preparation, validation of tool and structured teaching programme for teaching.
- The phase II comprises of assessment of knowledge of adolescent girls regarding PCOD by structured knowledge questionnaires (O1) and STP which was given on the same day (X), and finally the post test taken on seventh day using the same questionnaire (O2).
- The phases III deals with the evaluation of effectiveness of structured teaching programme by description and inferential statistics.

### a. THE SAMPLE

A sample is subset of population selected to participate in the research study, (Polit and Hungler).

A sample is a small portion of the population selected for observation and analysis, the sample for present study comprised for 40 adolescent girls from selected school of Indore.

In this study, the sample comprised of 40 girls of chhatrapati shivaji higher secondary school Indore. Teaching was given through L.C.D, skit. Total 40 girls were been taken of 15-17 years with equal age distribution.

## 3.5 SAMPLE TECHNIQUE

Sample refers to the process of selecting a portion of the population to represent entire population.

In the study, the sample will be selected through purposive sampling technique because of limited amount of the time and availability of subject according to sampling criteria.

## 3.6 SAMPLE SELECTION CRITERIA

### INCLUSIVE CRITERIA-

1. Adolescent girls who are willing to participate in study.
2. Adolescent girls who are available at the time of data collection

3. Adolescent girls who comes under age of 15-17year.

4. Who had attained their menarche.

### **EXCLUSIVE CRITERIA-**

1. Girls who are not willing to participate in the study?
2. Those who are of age group less than 15 year and more than 17 years.

### **3.7 DEVELOPMENT OF TOOLS**

A structured test was prepared for assessment of knowledge of adolescent girls regarding PCOD. It will be based on literature extracted from journals, books, research, report & personal experience & expert guidance. The tools used in the study are:

**Section 1:** Socio-demographic variables.

**Section 2:** Structured knowledge questionnaire.

### **PREPARATION OF THE BLUE PRINT:**

A blue print to the construction of structured knowledge questionnaire based on which the items were developed. Structure knowledge questionnaire includes three domains with relevant question that is knowledge items (10) comprehension items (8) and application items (13). The content area was been divided into introduction of PCOD, anatomy & physiology , definition of PCOD, etiology, sign & symptoms, Pathophysiology, diagnostic evaluation, management of PCOD.

**DESCRIPTION OF THE TOOLS:** - According to Polit and Hungler a written device that a researcher uses to collection data is called as an instrument.

Data collected tools are the instrument, e.g. structured questionnaire was used by the researcher to measure the variable.

The tools was been divided into two sections

### **SECTION -A**

It describes the demographic variables. It compromises of basic information regarding age, religion, no. of female family member, education of mother, income of family, type of family, source of information.

### **SECTION – B**

Structured knowledge questionnaire.

### **3.8 VALIDATION OF TOOL**

Validity refers to whether a measurement instrument accurately measures what it is supposed to measure.

**A. CONTENT VALIDITY:** - Polit and Hungler defined content validation as the degree to which the items in an instrument adequately represent universe of the content or the domain of a given construct.

The prepared instrument along with the statement of problem, objectives, hypothesis,, operational definition, blue print, scoring key and lesson plan of structured teaching programme on PCOD were submitted to expert who included five nurse educators to established content validity. Expert gave their opinion on the clarity and appropriateness of the items.

## SECTION - A

### Demographic variables –

It describes the demographic variables. It comprises of basic information regarding age, religion, education, income of family, no. of female family member, type of family, source of information.

### Structured knowledge questionnaire.

This part of tools consists of 24 items in different aspects of into, into introduction of PCOD, anatomy & physiology, definition of PCOD, etiology, sign & symptoms, Pathophysiology, diagnostic evaluation, management of PCOD.

Each item in tools consisted of multiple-choice answer. Investigator asked questions carefully to respondents and recorded the response by putting the ( ✓ ) mark. In addition, there is one single answer for each question and each questions carried one score. The maximum total score of the questionnaire was 24. Score was graded as following:-

Good	:	17 -24
Average	:	9-16
Poor	:	0-8

### 3-9 RELIABILITY OF THE TOOLS

“Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring.” Reliable instruments obtain consistent results when reused.

(Polit and Hungler 1995)

In this study the reliability co-efficient was calculated using ‘split half crobach’s alpha method. ‘The items were coded and the reliability was calculated. The reliability co-efficient was found to be 0.960

Significantly which is more than 0.7 hence the tool was found reliable.

The final term of tool consisted of 40 items where each item was given ‘one score’. The purpose was to determine the clarity of the item, presence of ambiguous item and the difficulty in understanding scientific

terms and to ensure the reliability and feasibility of the tool. A few modifications in terms of clarification use of simpler to understand.

### 3-10 VALIDATION OF STRUCTURE TEACHING PROGRAMME

The content of structure teaching programme along with the definitions, objective, hypothesis, tools, A.V. Aids was sent to 5 experts for validation.

The criteria were prepared to validate structure teaching programme. It includes:

1. Formulation of the objectives.
2. Selection of content.
3. Organization of content.
4. Language
5. Audio visual aids. (The suitability of pictures in the structure teaching programme).
6. Any other suggestions.

There is a 100% agreement in the content are with suggestions for the addition of some points those were added.

Developed of structure teaching programme:-

The investigator purposed a structure health teaching and the content of the final teaching were:

1. Introduction of PCOD.
2. Anatomy & physiology.
3. Definition of PCOD.
4. Etiology.
5. Sign & symptoms.
6. Pathophysiology.
7. Diagnostic evaluation.
8. Management of PCOD.
9. Summary.
10. Conclusions.

### 3.11 PILOT STUDY:-

A pilot study is a small-scale version or trail run of the major study. The function of the study is to obtain information and asses' feasibility of the study for improving and to decide the plan for data analysis.

The tool is tested in a pilot study, which is an important step in the development of a new tool or necessary changes in the same tool and increase its reliability and validity. After permission, a pilot study was undertaken. A pilot study was conducted by the investigator to adolescent girls of sun shine higher secondary school. Indore from 1<sup>th</sup> to 7<sup>th</sup> June 2017 to test the practicability of this tool and to decide on a plan

for a statistical analysis, the study was conducted on 10 adolescent girls. Samples were selected by no-probability convenience sampling techniques. They were assured about the confidentiality of the information collected. Data was collected through the structured interview schedule questionnaire pretest was given on 1<sup>st</sup> day i.e. on 1<sup>st</sup> June; planned teaching programme was administered on the same day and , post test was done on 7<sup>th</sup> day i.e. on 7<sup>th</sup> June using the same tool. After post-test the data was analyzed with the help of discipline and inferential statistics.

Finding indicated the planned teaching programme was effective for women in increasing their knowledge regarding “knowledge of PCOD “

### **PROCEDURE FOR DATA COLLECTION:-**

Official permission was obtained from selected sun shine higher secondary and chhatrapati shivaji higher secondary school, Indore (M.P.). The individual consent was taken from selected samples.

The actual data was collected from-1<sup>st</sup> June and ended on 7<sup>th</sup> June at starting of this session a group of adolescent’s girls was introduced by investigator.

They were explained about the purpose of the study and assured about confidentiality of the information between the investigator and the respondent only.

The investigator himself administered the structured questionnaire schedule for the pretest. Everyday 10 samples were taken for pretest respectively from 1<sup>st</sup> June the duration of data collection for pretest was 30 minutes. Teaching and skit was given to their study group by keeping language simple made the session very pleasant in English language as all the participant were English and Hindi speaking girls.

The instruction about posttest was given to the respective participants, after 7<sup>th</sup> day of the pretest; the post-test was conducted from dated-14<sup>th</sup> June-- respectively by investigator time taken for post test was approximately 30 min.

### **PLAN FOR DATA ANALYSIS –**

The data obtained was analyzed in terms of achieving the objectives of the study using descriptive and inferential statistics

Statistical analysis of data

- Organization of data in master sheet.
- Frequencies and percentage to use for analysis of demographic characteristics.
- Calculation of mean, standard deviation of pretest and post test scores.
- Application of paired “T” test to ascertain whether there is significant deference in the means knowledge score pretest and posttest values.
- Application of F-test to find 5 associations between variables with pretest, posttest scores of knowledge aspect.
- Data will be expressed in tables and figures for better clarification.

**SUMMARY:-**

This chapter deals with the methodology for the pretest study. It included the pre-experimental research approach, research design was one group pre test-posttest, and variables under the study were structured teaching programmers on PCOD were dependent and independent variables. The research setting was the selected school of Indore, (M.P.) the target population for the study was the adolescents girls, 40 samples selected by simple random technique data collection tool was developed that is development of a structure teaching programme, development of structure knowledge questionnaire this chapter also included pilot study, and procedure for data collection and plan data analysis.

**CHAPTER – IV****DATA ANALYSIS AND INTERPRETATION**

Analysis is the process of organization, synthesizing the data in such a way that research question can be answered, and hypothesis tested. The purpose of the analysis is to reduce the data into an intelligible and interpretable form, so that the relation of research problem can be studied and tested. Analysis and interpretation of data collection from 40 adolescent girls was done based on the objective and hypotheses of the study using descriptive and inferential statistics.

**Objectives**

1. To assess the pre-test knowledge score regarding (PCOD) among adolescents girls.
2. To assess the posttest knowledge score regarding PCOD among adolescents girls.
3. To determine the effectiveness of structure teaching programme regarding PCOD in terms of knowledge score among of adolescents girls.
4. To find the association between pretest knowledge score with the selected demographic variables ( age, no of female members, religion, type of family, education of mother, family income, source of information).

**HYPOTHESIS**

**H<sub>1</sub>** – There will be significant difference between pre test scores regarding PCOD among adolescent girls at the level of  $P \leq 0.05$

**H<sub>2</sub>** – There will significant association between pre test knowledge scores regarding PCOD among adolescent girls with their selected demographic variables at the level of  $P \leq 0.05$ .

**Organization of findings:-**

**The data was analyzed and presented under following headings:**

Section 4.1: Frequency and percentage distribution of sample characteristics and demographic variables.

Section 4.2: frequency and percentage distribution of pretest and posttest knowledge.

Section 4.3: comparison of mean pretest and posttest knowledge score.

Section 4.4: association between demographic variables and knowledge score.

## SECTION I

### 4.1 SAMPLE CHARACTERISTICS

This section deals with the data pertaining to the sample characteristics of the subjects. It is presented and analyses in terms of frequency and percentage distribution.

Show the distribution of sample characteristics with respect to subject, Age, , no of female family members, religion, type of family, education of mother, family monthly income, source of information.



## SECTION 4.1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE CHARACTERISTICS AND DEMOGHAPHIC VARIABLES

**Table No. 1**

### 4.1 Frequency and percentage distribution of sample characteristics

(N=40)

S. No.	Selected demographic variable	Frequency table	Percentage %
1.	<b>Age in years</b> <13 14-15 16-17 18 and above	07 15 13 05	13% 37% 33% 13%
2.	<b>No. of female family member</b> 1 2 3 More than 3	10 14 07 09	15% 35% 20% 30%
3.	<b>Religion</b> Hindu Christian Muslim Other	32 03 05 00	87% 05% 05% 03%
4.	<b>Type of Family</b> Nuclear Family Joint family Extended family Other	27 12 01 00	67% 30% 00% 03%
5.	<b>Monthly Family Income</b> 3000-5000 Rs. 5000-7000 Rs.	05 14	12% 35%

	7000-10000	17	43%
	10000- Above	04	10%
6.	<b>Education of mother</b>		
	Illiterate	29	35%
	Primary	08	37%
	Secondary	03	18%
	Graduation	00	10%
7.	<b>Source of information</b>		
	Family members	14	35%
	Peers	10	25%
	Mass media	12	30%
	Health personnel	04	10%

- **According to Table No. 1**, There was age distribution of subjects adolescent girls age 7(13%), belong below 13 years of age, 15 (37%) belong in 14-15 years of age, 13(33%) belong 16-17 year age, 5(13%) belong 18 and above year of age.
- **According to Table No.2**, regarding the number of female family members, 10 subjects (25%) have only 1 female family member, 14 subjects (35%) have 2 female family members, 7 subjects (20%) have 3 female 9 subjects (30%) have more than 3 female family members.
- **According to Table No.3** most of subject 32(87%) belong to Hindu religion, 3(5%) to Christian, 5(5%) to Muslim, 0 (%) to other respectively. The majority of subject belongs to Hindu religion.
- **According to Table No.4** regarding to type of family 27 subjects (67%) lives in nuclear family, 12 subjects (30%) lives in joint, 1 subject (03%) to extended, 0 subjects (0%) lives to other family member respectively.
- **According to Table No.5**, regarding the family income, 5subjects(12%) has 3000 to 5000 as their family income, 14 subjects (35%) has 5000 to 7000 their family Income,17 subjects (43%) has 7000 to 10000 as their family income 4 subjects (10%) has family income abov10000 .
- **According to table no. 6**, regarding education of mother, 29 subjects (73%) mothers were illiterate, 15 subjects (20%) mothers were educated upto primary level,08 subject (7%) mothers were educated upto secondary level 4(10%) mothers were graduated.

• According to table no 7, regarding to information 14subjects ((35%) to family members,10 subjects (25%) to peers, 12 subjects( 30%) to mass media 4 subjects (10%) health personnel are source of information. Family members are higher % of source of information respectively.

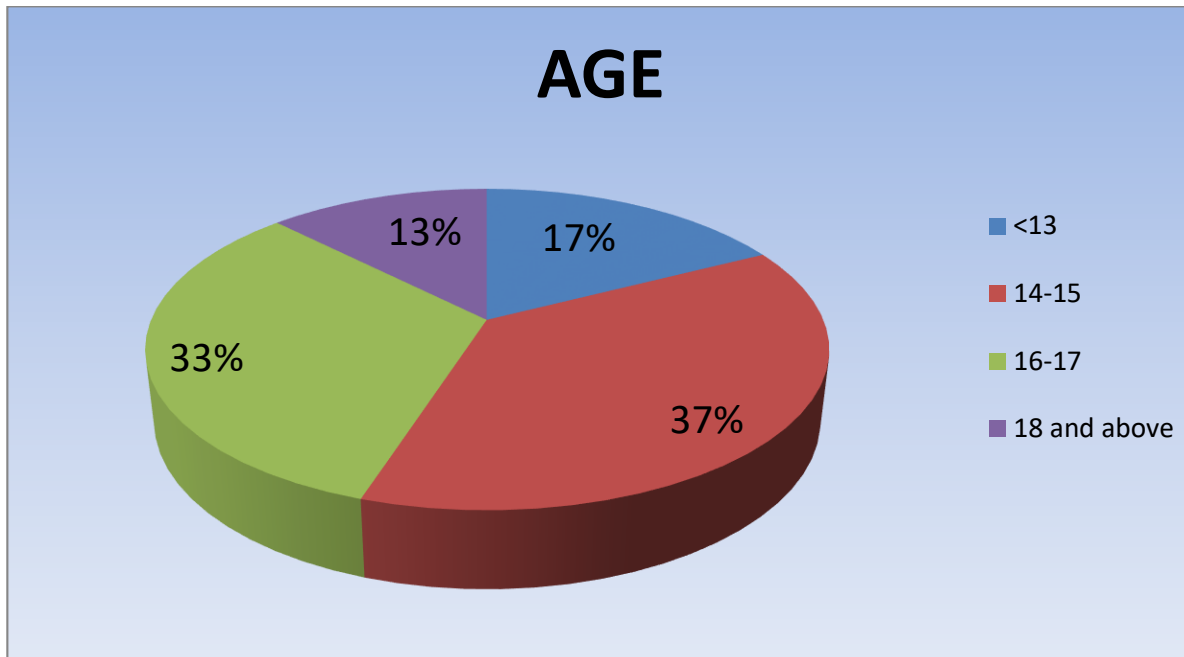


Figure 1.pie diagram showing distribution of adolescent girls according to the age

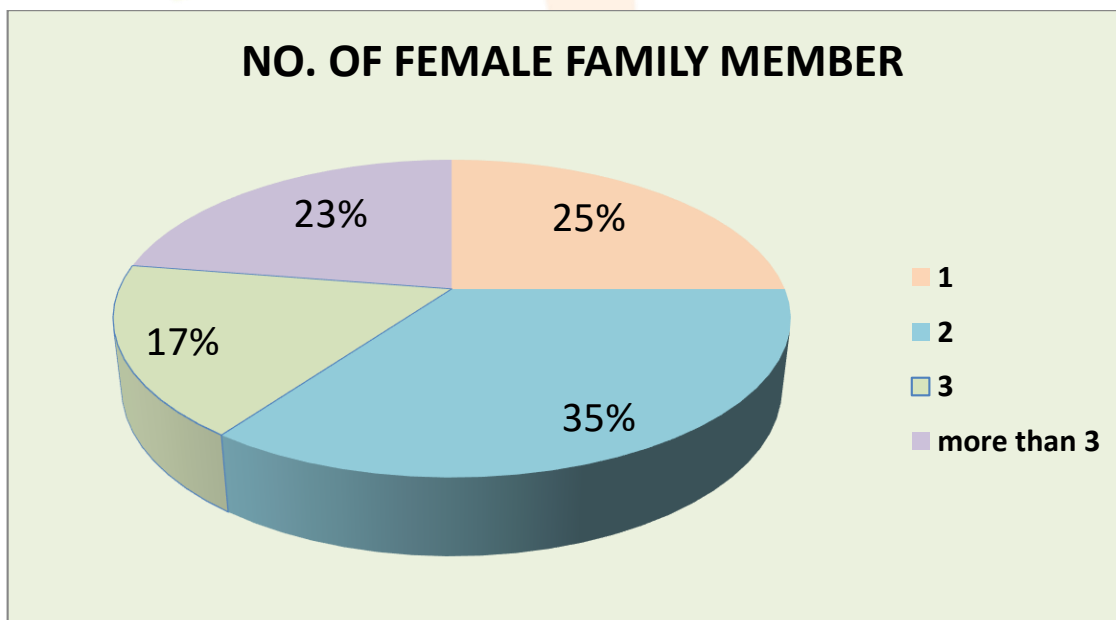


Figure 2.Pie diagram showing distribution of adolescent girls according to the No. of female family members

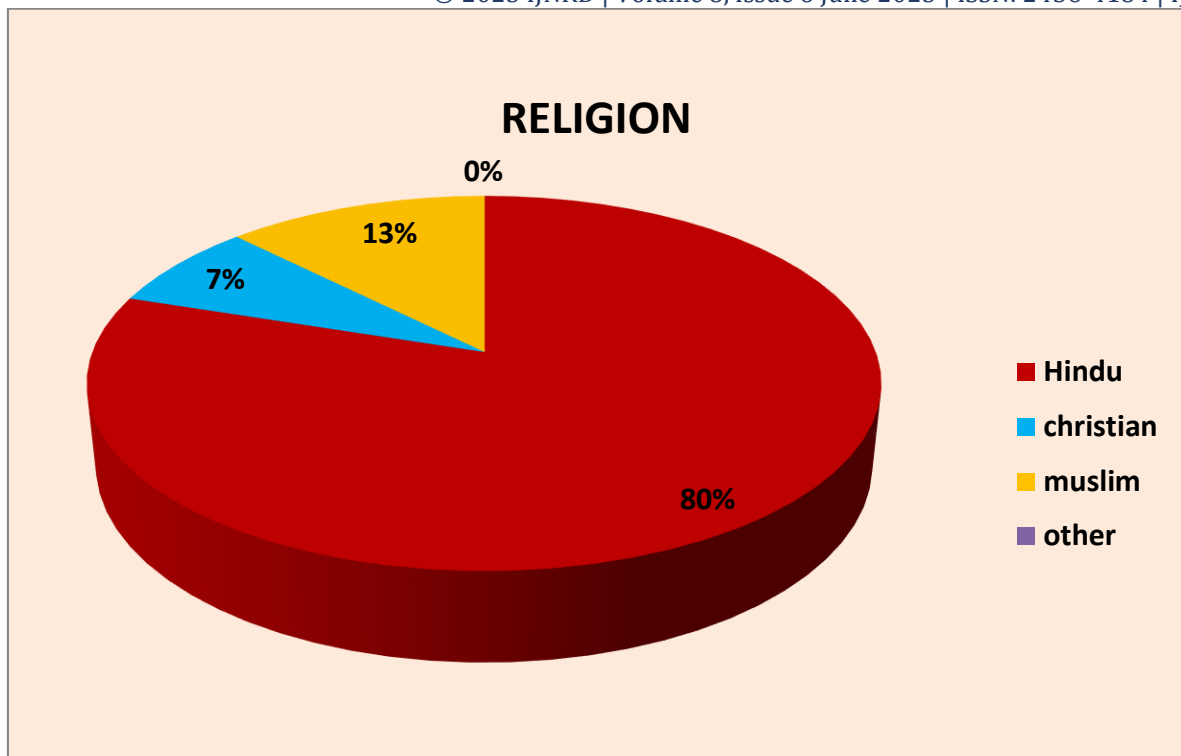


Figure 3. Pie diagram showing distribution of adolescent girls according to religions

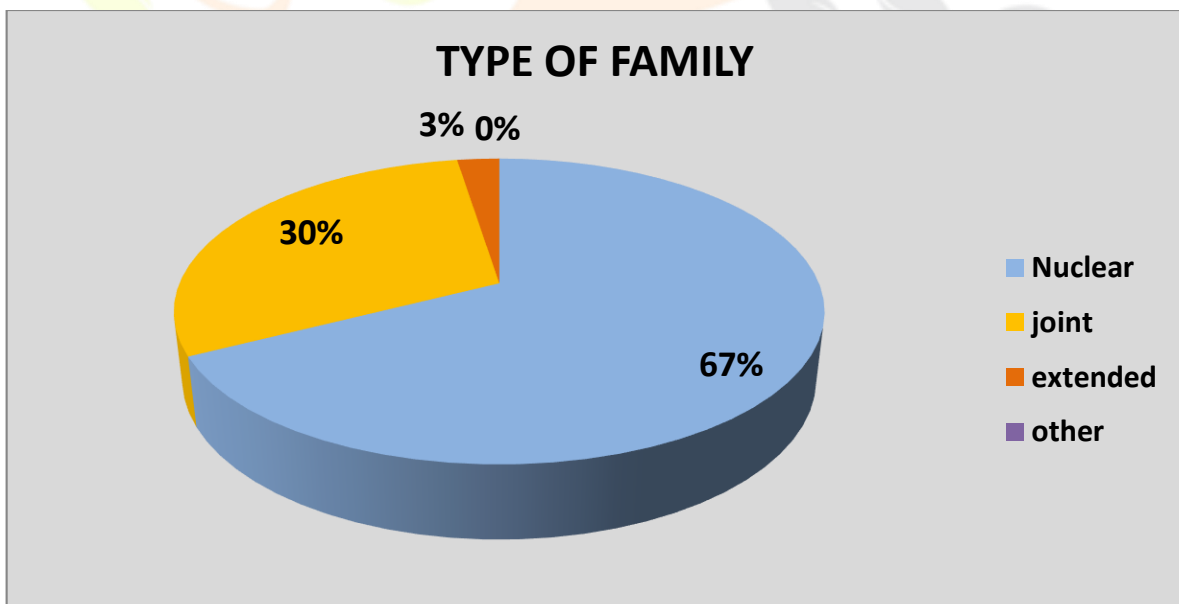


Figure 4. Pie diagram showing distribution of adolescent girls according to type of family

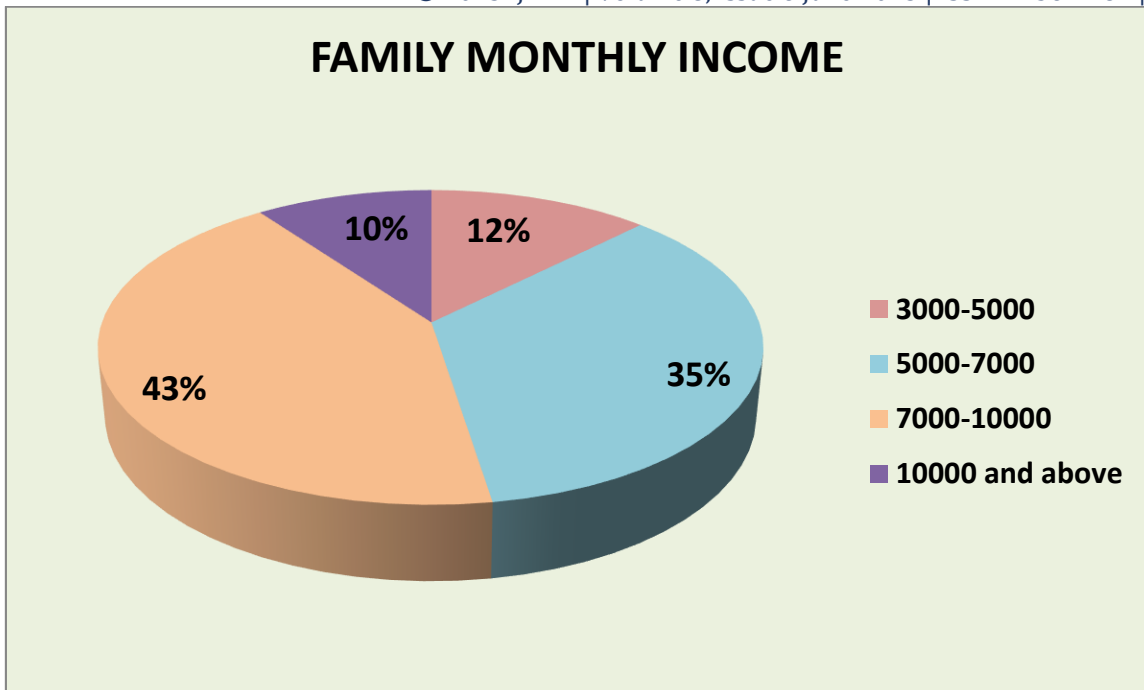


Figure 5. Pie diagram showing distribution of adolescent girls according to family monthly income.

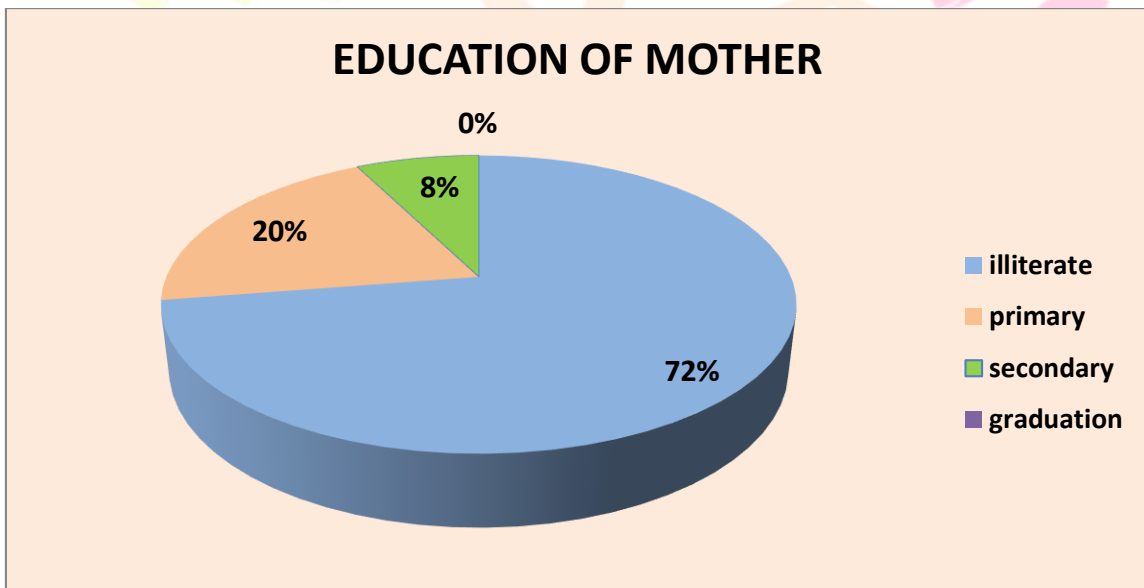
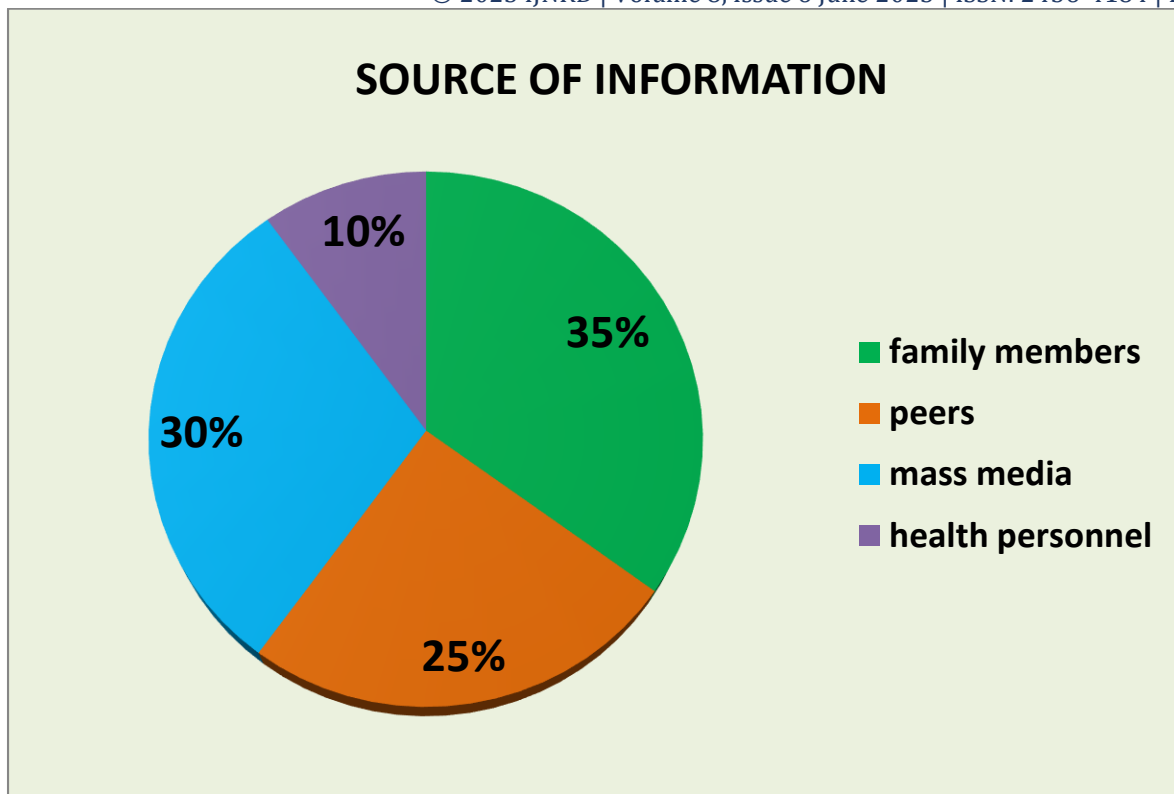


Figure 6. Pie diagram showing distribution of adolescent girls according to education of mother.



**Figure 7. Pie diagram showing distribution of adolescent girls according to source of information**

#### **SECTION 4.2 FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRETEST KNOWLEDGE**

The pre-test knowledge and post-test knowledge level of adolescent girls' Chhatrapati Shivaji H. S. Students who are studying in a selected schools of Indore,

**Table No. 2**

**Frequency and percentage distribution of pretest knowledge**

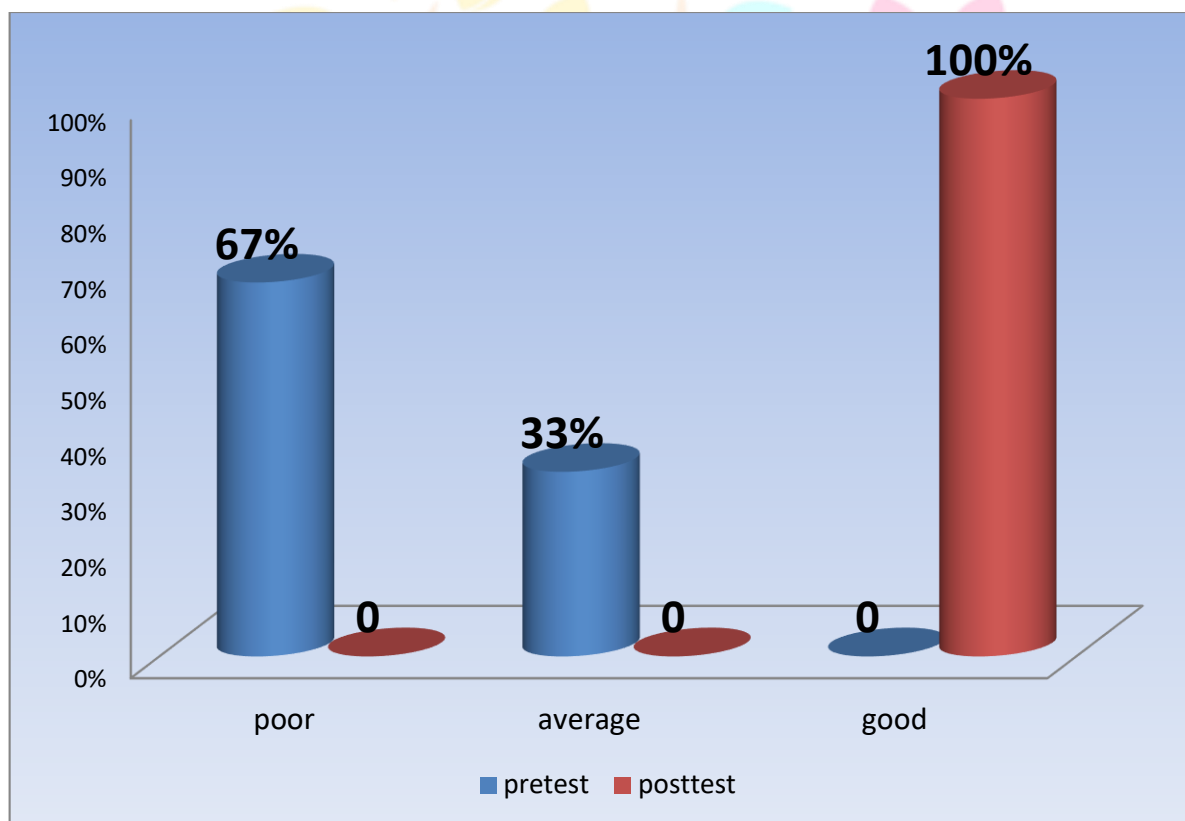
**(N = 40)**

knowle dge score	Gradin g of knowle dge	Pre-test knowledge score		Post-test knowledge score	
		Frequency	Percenta ge	Frequen cy	Percentage
0-8	Poor	27	67%	-	0%

9-16	Average	13	33%	-	00%
17-24	Good	-	0%	40	100%

Data in the Table No. 2 shows that maximum knowledge score regarding PCOD, of pre-test were 67% (27) between 0-8 poor knowledge score & 33% (13) between 9-16 average knowledge score & in post-test knowledge score were 100% (40) between 17-24 good knowledge score.

## COMPARISON OF PRETEST KNOWLEDGE SCORE



**Fig.N.11** Bar diagram showing frequency and percentage comparison of pre-test and post-test knowledge score

### SECTION 4.3: COMPARISON OF MEAN PRETEST AND POST EST KNOWLEDGE SCORE

Effectiveness of structure teaching programme in terms of gain knowledge score.

**Table No. 3**

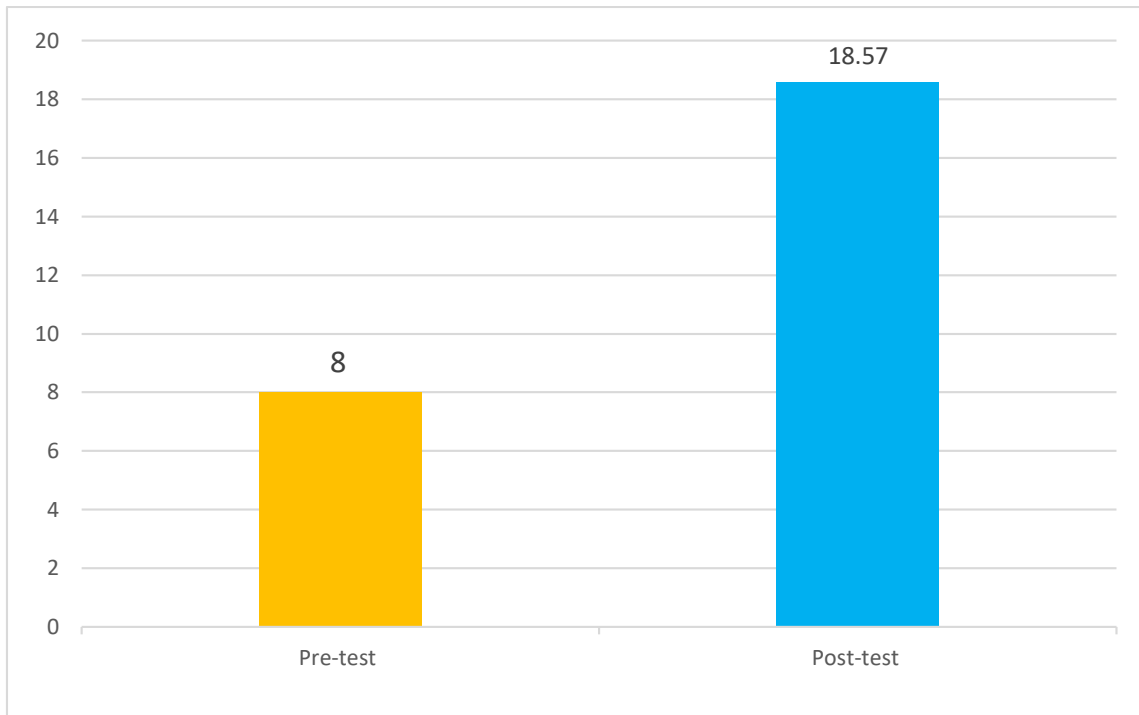
#### Mean Standard Deviation knowledge score

Knowledge score	Mean	SD	Mean difference	t' test Value	Df	P value
<b>Pre-test</b>	08	3.20	10.57	20.13	39	0.005
<b>Post-test</b>	18.57					

The data presented in Table No. 3 shows that the mean post-test knowledge score (18.57) is apparently higher than the mean pre-test knowledge score (08).

Above table 03 shows, that statistically there was significant difference in knowledge score of PCOD of the students in selected school of Indore. The calculated values are compared and paired' test is applied at 0.05 level of significant. The tabulated "t" value for 39 degree of freedom is 2.023 and calculated "t" value 20.13 level of significant.

Hypothesis was tested by using paired "t" test. The "t" was calculated to analysis the score of PCOD of the students in school of Indore with their pre-test and post-test score. The research hypothesis was formulated to evaluate a study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD) among adolescent girls in selected schools of Indore (M.P.)



**Fig.N.10** Bar diagram showing comparison between pre-test and post-test mean score

## SECTION 4.4: ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLE AND KNOWLEDGE SCORE

The following tables shows the association between the demographic variables and knowledge score grading .Karl Pearson, chi-square test is applied to find out the association. P value of  $< 0.05$  shows a statistically significant association.

The test of association shows only presence / absence of an association but does not show the strength and direction of this association.

**Table No. 4**

**Association between level of pre-test knowledge score and selected demographic variable**

S. No.	Selected demographic variable	Pre-test knowledge score			F	%	DF	P. value
		Poor	average	good				
1.	<b>Age in years</b>							
	<13	03	04	0	7	17.5%	3	6.11 NS
	14-15	09	06	0	15	37.5%		
	16-17	12	01	0	13	32.5%		
	18 and above	03	02	0	05	12.5%		

2.	<b>No. Of female family members</b>							
	1	05	05	0	10	25%	3	1.45
	2	10	04	0	14	35%		NS
	3	05	02	0	07	17.5%		
	More than 3	05	04	0	09	20.5%		
3.	<b>Religion</b>							
	Hindu	24	08	0	32	80%	2	5.85
	Christian	02	01	0	03	7.5%		NS
	Muslim	01	04	0	05	12%		
	Other	00	00	0	00	00%		
4.	<b>Type of Family</b>							
	Nuclear	20	07	0	27	67.5%	2	1.41
	Joint Family	07	05	0	12	30%		NS
	Extended	01	00	0	01	2.5		
	Other	00	00	0	00	00		
5.	<b>Family income</b>							
	3000 - 5000 Rs.	03	02	0	05	12.5%	3	1.40
	5000 - 7000 Rs.	10	04	0	14	35%		NS
	7000 - 10000 Rs.	12	05	0	17	42.5%		
	Above 10000 Rs	02	02	0	04	10%		
6.	<b>education of mother</b>							
		21	08	0	29	72.5%	2	3.44
	Illiterate	05	03	0	08	20%		NS
	Primary	03	00	0	03	7.5%		
	Secondary	00	00	0	00	00%		
	Graduation							
7.	<b>source of information</b>							
	Family members	10	04	0	14	35%	3	0.62
	Peers	07	03	0	10	25%		NS
	Mass media	08	04	0	12	30%		
	Health personnel	02	02	0	04	10%		

NS - Non significant.

\* Significant

p&lt;0.05

The data in Table No. 4 depicted the computed pre-test knowledge score and the demographic variables.

1. The above table shows the association between the demographic variable age with knowledge score grading. The chi-square value obtained is 6.11 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that age does not affect the knowledge score grading.

2. The above table shows the association between the demographic variable no. of female family member with knowledge score grading. The chi-square value obtained is 1.45 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that no. of female family member does not affect the knowledge score grading.

3. The above table shows the association between the demographic variable religions with knowledge score grading. The chi-square value obtained is 5.85 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that religion does not affect the knowledge score grading.

4. The above table shows the association between the demographic variable types of family with knowledge score grading. The chi-square value obtained is 1.41 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that type of family does not affect the knowledge score grading.

5. The above table shows the association between the demographic variable family monthly incomes with knowledge score grading. The chi-square value obtained is 1.40 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that family monthly income does not affect the knowledge score grading.

6. The above table shows the association between the demographic variable educations of mother with knowledge score grading. The chi-square value obtained is 3.44 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that education of mother does not affect the knowledge score grading.

7. The above table shows the association between the demographic variable sources of information with knowledge score grading. The chi-square value obtained is 0.62 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that source of information does not affect the knowledge score grading.

## CHAPTER – V

### MAJOR FINDINGS DISCUSSION, CONCLUSION, IMPLICATION, LIMITATION, AND RECOMMENDATIONS

This chapter deals with the major finding of the study, discussion of the findings, summary, implications, recommendations and conclusion.

The findings of this study have been discussed with reference to the objective and hypothesis.

#### STATEMENT OF THE PROBLEM

“A study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD) among adolescent girls in selected schools of Indore (M.P.)”

#### **OBJECTIVE-**

The objectives of the study were,

- 1 To assess the pre-test knowledge score regarding (PCOD) among adolescent girls.
- 2 To assess the post- test knowledge score regarding PCOD among adolescent girls.
- 3 To determine the effectiveness of structure teaching programs regarding PCOD in terms of knowledge score among adolescent girls.
- 4 To find the association between pre-test knowledge score with the selected demographic variable.

#### **HYPOTHESIS-**

**H<sub>1</sub>** – There will be significant difference between pre test knowledge scores regarding PCOD among adolescent girls at the level of  $P \leq 0.05$

**H<sub>2</sub>** – There will significant association between pre test knowledge scores regarding PCOD among adolescent girls with their selected demographical variables at the level of  $P \leq 0.05$ .

#### **Major findings of the study-**

- ***Baseline characteristic:-***

The adolescent girls were equally distributed in the age groups of 15 and 17 year. The distribution of the adolescent girls with regard to religion showed the majority (80%) of the were Hindus, (13%) were Muslims and (7%) were Christians, (0%) were others respectfully.

Nearly 12% of adolescent girls belonged to the family having a monthly income of less than Rs<3000-5000, 35% were having monthly income of Rs.5000, 7000, 43% were having Rs.7000-10000 and 10% were having Rs.10000 and above.

The education of the mother showed that highest percentage (72%) of the mother had did not attend school. The data also should that 20% of the mothers. Had primary education and 8% of the mothers had secondary education. The analysis of the present. Study should that there was significant association between the knowledge score of adolescent girls on PCOD and education of the mother. It may be because of the reason, in nuclear families mother are also playing an important role to give education to the daughter.

More than half (67.5%) of the adolescent girls were living in nuclear family while the remaining (30%) were living in joint family and 2.5% were living in other.

It indicates that nowadays more nuclear families than joint families.

The data an age at adolescent girls depicted that 37.5% of the adolescent girls under 14-15 year 32.5% of the adolescent girls under 16-17 year and remaining 17.5% of the adolescent girls under less than 13 year and 12.5% of the adolescent girls under 18 and above year

The data of female family members are 35% of adolescent girls belong to the family having 2 female family member, 23% .of adolescent girls belong to the family having more than female family member, 17% of adolescent girls belong to the family having 3 female family nuclear and 25% of adolescent girls belong to the family having 1 female family member.

Source of information on PCOD to majority 35% to the family member, 30 % to the mass communication, 25% to the peers and 10% to the health personal.

1. Knowledge of adolescent Girls on PCOD.
2. Effectiveness of STP on PCOD.
3. Association between knowledge and selected demographic variables.

## **DISCUSSION**

The findings of the present study are discussed with reference to the objective, hypotheses and the finding of other studies. Discussion of finding is based on the sample characteristics, knowledge and among adolescent girls regarding PCOD, effective structure teaching programme, association of knowledge and selected variables.

### **Association between knowledge and selected demographic variable**

The chi square computed between pre test knowledge score and selected demographic variables should that there is no significant association between the level of knowledge scores and selected demographic variables

with regard to age in year (15-17 year), no. of female family members, religion, type of family, family monthly income, education of mother, and source of information.

Thus association between knowledge and selected demographic variables is non significant hence hypotheses (2) is rejected

### **Frequency and percentage distribution of sample characteristics and demographic variables**

In the present study demographic characteristics of among adolescents girls are discussed by age, no. of female family members, religion, type of family, family monthly income, education of mother, and source of information.

There was age distribution of subjects adolescent girls age 7(13%), belong below 13 years of age, 15 (37%) belong in 14-15 years of age, 13(33%) belong 16-17 year age, 5(13%) belong 18 and above year of age.

Regarding the number of female family members, 10 subjects (25%) have only 1 female family member, 14 subjects (35%) have 2 female family members, 7 subjects (20%) have 3 female 9 subjects (30%) have more than 3 female family members.

Most of subject 32(87%) belong to Hindu religion, 3(5%) to Christian, 5(5%) to Muslim, 0 (%) to other respectively. The majority of subject belongs to Hindu religion.

Regarding to type of family 27 subjects (67%) lives in nuclear family, 12 subjects (30%) lives in joint, 1 subject (03%) to extended, 0 subjects (0%) lives to other family member respectively.

Regarding the family income, 5 subjects(12%) has 3000 to 5000 as their family income, 14 subjects (35%) has 5000 to 7000 their family Income, 17 subjects (43%) has 7000 to 10000 as their family income 4 subjects (10%) has family income above 10000 .

Regarding education of mother, 29 subjects (73%) mothers were illiterate, 15 subjects (20%) mothers were educated upto primary level, 08 subject (7%) mothers were educated upto secondary level 4(10%) mothers were graduated.

Regarding to information 14 subjects ((35%) to family members, 10 subjects (25%) to peers, 12 subjects(30%) to mass media 4 subjects (10%) health personnel are source of information. Family members are higher % of source of information respectively.

### **FEQUENCY AND PERCENTAGE DISTRIBUTION OF PRETEST AND POST KNOWLEDGE SCORE**

That maximum knowledge score regarding PCOD, of pre-test were 67% (27) between 0-8 poor knowledge score & 33% (13) between 9-16 average knowledge score & in post-test knowledge score were 100% (40) between 17-24 good knowledge score.

### **COMPARISON OF MEAN PRETEST AND POST TEST KNOWLEDGE SCORE:**

That the mean post-test knowledge score (18.57) is apparently higher than the mean pre-test knowledge score (08).

Above table 03 shows, that statistically there was significant difference in knowledge score of PCOD of the students in selected school of Indore. The calculated values are compared and paired 't' test is applied at 0.05 level of significant. The tabulated "t" value for 39 degree of freedom is 2.023 and calculated "t" value 20.12 level of significant.

Hypothesis was tested by using paired "t" test. The "t" was calculated to analysis the score of PCOD of the students in school of Indore with their pre-test and post-test score. The research hypothesis was formulated to evaluate a study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD) among adolescent girls in selected schools of Indore (M.P.)

### **ASSOCIATION BETWEEN LEVEL OF PRETEST KNOWLEDGE AND SELECTED DEMOGRAPHICAL VARIABLE**

1. The association between the demographic variable age with knowledge score grading. The chi-square value obtained is 6.11 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that age does not affect the knowledge score grading.
2. The association between the demographic variable no. of female family member with knowledge score grading. The chi-square value obtained is 1.45 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that no. of female family member does not affect the knowledge score grading.
3. The association between the demographic variable religion with knowledge score grading. The chi-square value obtained is 5.85 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that religion does not affect the knowledge score grading.

4. The association between the demographic variable type of family with knowledge score grading. The chi-square value obtained is 1.41 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that type of family does not affect the knowledge score grading.

5. The association between the demographic variable family monthly incomes with knowledge score grading. The chi-square value obtained is 1.40 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that family monthly income does not affect the knowledge score grading.

6. The association between the demographic variable educations of mother with knowledge score grading. The chi-square value obtained is 3.44 with a degree of freedom of 2. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that education of mother does not affect the knowledge score grading.

7. The association between the demographic variable sources of information with knowledge score grading. The chi-square value obtained is 0.62 with a degree of freedom of 3. P value obtained is  $>0.05$ , which is statistically not significant. Thus, there is no association between age and knowledge score grading, showing that source of information does not affect the knowledge score grading.

## CONCLUSION

The aim of this study was to assess the knowledge of adolescent girls on PCOD. The information was given with the aid of STP which included various aspects: menarche and menstruation, dysmenorrhea, amenorrhea, duration of menstruation cycle, which will help the adolescent girls to improve their knowledge and to adopt – a healthy lifestyle.

The following conclusion were drawn based on the present study,

- PCOD are the commonest problem among the adolescent girls.
- Dysmenorrhea is one of the leading causes for absenteeism.
- The knowledge of the adolescent girls was not up to the mark before the introduction of STP.
- After the introduction of the STP the post test finding showed the significant increase in the knowledge of adolescent girls on PCOD.
- STP is known to be one of the effective teaching structures.
- STP can be kept for future reference when comparing with PTP.
- STP will be beneficial for students entering the school and teacher can utilize the STM in the day to day education programs.

**Implication: -****Nursing implication:-**

The findings of the present study have implication in the field of nursing education, nursing practice, nursing administration and nursing research.

***Nursing education: -***

The health care delivery system at present is giving more emphasis on preventive rather than curative aspect. It is the responsibility of each individual to take care of one own health. The study also gives priority for the continuing education programmer as it upholds and maintains the knowledge and this making them more competent. The STP can be used as on informational and educational mode by the research and the nursing personnel for educating and school going girls. Nursing student should be trained to acquire knowledge in assessing PCOD and to planed teaching programmers based on the same in the hospital and in the community setting. Nursing curriculum although includes communication stall. It needs to lay further emphasis on information as a process.

***Nursing practice:-***

Health education is an important tool for health care agency. It is one of the most cost effective interventions to promote healthy living. Nurses working in the hospital as in the community should be equipped with knowledge on PCOD and should help people to lead a healthy life. Nurses are the key provider of preventive, curative and rehabilitative service to individual communities. Nurses in their educative role are in a better position to mould the health related behavior nurses are acting as the health promotes. So each child should be actively involved in the health promotion activities to bring changes.

Nurses play an important role in educating adolescents regarding menstrual disorder. Nurses should conduct training programmes for teacher and mother. They can integrate. These menstrual disorders in the school health programme too. Health education can be imported in the wards. OPDS and school through various methods like lectures, pamphlets, STP and booklet.

***Nursing administration:-***

Nurse administrators should take initiatives in creating plan and policies for the continuing education programme to the staff nurse. In each session they should asses s their lead of know ledge and stall before and after the continuing education programme and evaluate the effectiveness as well as the problem they face. They should plan for manpower, many, method and time to conduct. Successful educational programme .the staff should encouraged preparing teaching materials and audio visual aids regarding various health related topics and displaying them in the words, OPD and community setting. Health administration should make the education department aware about the prevailing health problem and assign the staff for conducting the structured teaching programme in hospital, school, and the community in general.

***Nursing research:-***

The emphasis on research and clinical studies is needed to improve the quality of nursing care. The present study is only on the initial investigation in the area of teaching the adolescent girls on PCOD are common among adolescent girls in the last decade. Nurse researchers should be aware about the health care system and status of nursing profession.

Dysmenorrhea cause's absenteeism, lack of concentration and poor academic performance .there is a great need for research in the areas of PCOD is very important for adolescent girls who help them to find out those disorders at the earliest and to take promote action. This study has highlighted the effectiveness of STP on PCOD.

**LIMITATION:-**

- 1 Sample was selected only from one institution hence generalization can only be made for the selected sample.
- 2 Studies were delimited to adolescent girls who are in the age group of 15-17 year.
3. The study did not use control group the investigator had no control over the events that took place between pre-test and post-test.
4. No attempts were made to do the follow up to check the retention of knowledge of adolescent girls.

**SUGGESTION:-**

- Continuing education could help the adolescent girl to update their knowledge regarding PCOD, health teaching unit could organize health teaching programme on PCOD.
- Teachers and parents should be motivated to educate the adolescent girls regarding PCOD.
- Teaching programme on PCOD could be arranged for adolescent girls by health care team in the school and communities.
- Educational programmes with effective teaching strategies like skit, pamphlets, PPT, structure teaching programme help the people to understand the concept easily and those education materials can be kept in school libraries.

**RECOMMENDATIONS:-**

On the basis of study findings, following recommendation have been made for further study.

1. The study can be a replicated on a large sample with a control group.
2. A comparative study may be conducted to find out the effectiveness between PTP and STP regarding the same topic.
3. Similar study can be undertaken using other teaching strategies.
4. Similar study can be conducted using larger number of sample.

5. A study can be conducted to find the knowledge and attitude of adolescent girls regarding PCOD.

## **SUMMARY:-**

The overall experience of conducting this study was satisfying one, there was good co-operation from adolescent girls and college authorities. The respondents were satisfied and happy with the information they received the study was a new learning experience for the investigator. The study reveals that STP could be used as an effective teaching strategy.

## **CHAPTER VI**

### **SUMMARY**

This chapter presents the summary of the study. Menstruation is a normal monthly cycle in women, women between puberty and menopause experience menstruation. It can start between the age of 8-13 and last until between 45-55 year. Though menstruation is normal, some women experience dilemma during their monthly period like, menstrual cramps, may be severely painful and can interfere with regular activities, sometimes leading to absenteeism in school or in other function.

A STP will help the adolescent girls to gain knowledge about PCOD and to seek medical advice promptly whenever needed. The present study was undertaken to evaluate the effectiveness of STP on knowledge of PCOD among adolescent girls.

### **Objectives of the study were,**

1. To assess the pre-test knowledge score regarding (PCOD) among adolescent girls.
2. To assess the post test knowledge score regarding PCOD among adolescent girls.
3. To determine the effectiveness of structure teaching programme regarding PCOD in terms of knowledge score among adolescent girls.
4. To find the association between pretest knowledge score with the selected demographic variables.

### **ASSUMPTION**

1. School girls possess some knowledge regarding polycystic ovarian disease.
2. School girls have some knowledge regarding irregular menstruation.
3. The structured teaching programme on PCOD will enhance relevant knowledge of adolescent girls regarding PCOD.

## **HYPOTHESIS**

**H<sub>1</sub>** – There will be significant difference between pre test knowledge scores regarding PCOD among adolescent girls at the level of  $P \leq 0.05$

**H<sub>2</sub>** – There will significant association between pre test knowledge scores regarding PCOD among adolescent girls with their selected demographical variables at the level of  $P \leq 0.05$

## **Conceptual that framework**

The conceptual farm work was based on Ludwig von Bertalanffy's general system theory with input, process, output and feedback, which was introduced in 1968.

**Method:** - This study made use of on evaluative approach with a one group pretest post-test design. The sample for the study sample comprised of 40 adolescent girls. A disproportionate simple random sampling technique was used to se

Pilot study was conducted among 10 adolescent girls. This gave a basis for the investigator to conduct the actual study the actual study was conducted among 40 adolescent girls. Following there-test, STP was administered and post-test conducted seven days after the administration of STP. The obtained data was analyzed in term of the objectives and hypotheses using descriptive and inferential statistics.

**Interpretation:** - the finding of the study showed that STP is an effective teaching strategy to increase the knowledge of adolescent girls on PCOD.

**Result:** - The findings of the study proved that adolescent girls lacked knowledge on PCOD the structure teaching programmme given by the investigator helped the adolescent girls to improve their knowledge. The effectiveness of STP was tested in terms of gain in knowledge and the finding showed that it was statistically significant at 0.05 level of significance. The finding of the study proved that STP is an effective strategy in improving the knowledge of the adolescent girls. All the subjects had again in knowledge compared to their pretest knowledge scores. On the whole, carrying out the pretest study was really an enriching experience to the investigator. It also helped a great deal to explore and improve the knowledge of the researcher and the respondents. The constant encouragement and guidance by the guide, co-operation and interest of respondent in the study contributed to the fruitful completion of the study

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## Appendix - I

### Letter seeking permission to conduct the pilot study in sunshine higher secondary school of Indore M.P.

 **INDEX NURSING COLLEGE**  
(Unit of mayank's Welfare Society)  
Approved by Indian Nursing Council, New Delhi  
Madhya Pradesh Nurses Registration Council, Bhopal (M.P.)  
and Affiliated to Devi Ahilya Vishwavidyalaya, Indore (M.P.)

Ref.: JNC/PO/17/1962 Date: 29/05/2017

To  
The Principal  
SUNSHINE H.S. SCHOOL  
KHANDWA ROAD, INDORE (M.P.)

Subject: Seeking permission to conduct pilot study.

Respected sir,

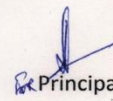
This is to bring into your kind notice that the student of B.sc nursing 4<sup>th</sup> year of index nursing college has selected the research study under the guidance of Mrs. Anu v. Kumar assistant professor OBG nursing department the study is to be submitted to D.A.V.V. university Indore, in partial fulfillment of university requirement for the award of bachelor of nursing degree.

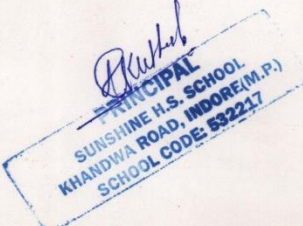
TOPIC: - "A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURE TEACHING PROGRAMME ON KNOWLEDGE REGARDING POLYCYSTIC OVARIAN DISEASE AMONG ADOLESCENT GIRLS IN SELECTED SCHOOL IN INDORE (M.P.)

We are in need of your esteemed help and cooperation as we are interested in conducting the pilot study in your school, so I request you to kindly extend all the necessary permission to the students. All the information provided by the students will be kept extremely confidential.

Thanking You  
Yours faithfully

1. Rajpal Singh  
2. Pinky Malgaya  
3. Shivani bhadoriya  
4. Uma Rathore  
5. Man Singh  
6. Fazalu ddin Pathan  
7. Anushree morya

  
Principal  
index Nursing College  
**Principal**  
**Index Nursing College**  
**INDORE (M. P.)**

  
PRINCIPAL  
SUNSHINE H.S. SCHOOL  
KHANDWA ROAD, INDORE (M.P.)  
SCHOOL CODE: 532217

Collage Address: Gram Moradhat, Nemawar Road, Post Bhavlia Khurd, District Indore - 452016 (M.P.) Ph. 0731-4013751 Fax: 0731-4013750  
Website: [www.indexgroup.co.in](http://www.indexgroup.co.in) E-mail: [nursing@indexgroup.co.in](mailto:nursing@indexgroup.co.in)  
City Office: 104 Trishul Apartment, 5, Sanghi Colony A.B. Road, Indore (M.P.) Ph. 0731-4215757, 4044715 fax 0731-4044715

## Appendix - II

### Letter seeking permission to conduct the main study in chhatrapati shivaji h. s. school of Indore M.P.

***Index***  
**NURSING COLLEGE**  
(Unit of Mayank's Welfare Society)

No. / INC / P.O. / 17 / 1979 08/06/2017

To,  
The Principal  
**CHHATRAPATI SHIVAJI H.S. SCHOOL**  
**GANGSH. NAGAR, INDORE (M.P.)**

**Subject: - Seeking permission to conduct research study.**

Respected Sir/Madam,

This is to bring into your kind notice that the students of B. Sc Nursing 4<sup>th</sup> year of Index Nursing College has selected the research study under the guidance of **Mrs. Anu V. Kumar**, Assistant Professor (**Obstetrics & Gynecological Nursing Dept.**). The study is to be submitted to D.A.V.V. University Indore, in partial fulfillment of university requirement for the award of Bachelor of Nursing degree.

**TOPIC: - "A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURE TEACHING PROGRAMME ON KNOWLEDGE REGARDING POLYCYSTIC OVARIAN DISEASE AMONG ADOLESCENT GIRLS IN SELECTED SCHOOL, INDORE, M.P.**

They are in need of your esteemed help and cooperation as they are interested in conducting the main research study in your school, so I request you to kindly extend all the necessary permission to the students.

All the information provided by the students will be kept extremely confidential.

Thanking You

Yours faithfully

1. Rajpal Singh  
2. Pinky Malgaya  
3. Shivani Bhadoriya  
4. Uma Rathore  
5. Man Singh  
6. Fazaluddin Pathan  
7. Anushree Morya

*K. Anand*  
**Principal**  
**Chhatrapati Shivaji Higher Secondary School**  
**Gangesh Nagar, INDORE (M.P.)**

*[Signature]*  
**Principal**  
**Index Nursing College**  
**Indore (M.P.)**  
**Index Nursing College**  
**INDORE (M. P.)**

College Address : Post Bhavlia Khurd, Nemawar Road, Indore - 452 016 (M.P.) Ph. : 9755655000 Fax : 0731-2865586  
City Office : 104, Trishul Apartment, 5, Sanghi Colony, Indore (M.P.) Phone : 0731-4215757, 4044715  
Fax : 0731-2542469, 4044715 E-mail : nursing@indexgroup.co.in visitus : www.indexgroup.co.in

## Appendix–III

### LETTER REQUESTING FOR THE OPINING AND SUGGESTION OF THE EXPERTISE

From:

B. Sc. Nursing final year (OBG Group)  
Index nursing college  
Post Bhavliakhurd, Nemawar road Indore [M.P.]

To,

.....  
.....

Subject: - letter requesting opining and suggestion of experts for establishing content  
Validity of the research data collection tool,

Respected Sir/ Madam,

We are a under graduate students of index nursing college, Indore. As the partial fulfillment of the B.Sc. nursing degree under Devi Ahilya University, selected the following topic for our dissertation.

Topic: - “A study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD) among adolescent girls in selected schools of Indore (M.P.)”

Herewith our have enclosed

1. Objectives of the study
2. Tool
3. Content of self-instructional module {booklet}

With regards to this request you to kindly validate our tool and rating scale against the given criteria and your valuable remarks.

The expert and opinion and kind cooperation will be appreciated.

Thanking you

Place:

**Index Nursing College**

Signature of Principal

## Appendix-IV

### CONSENT FOR PARTICIPATION

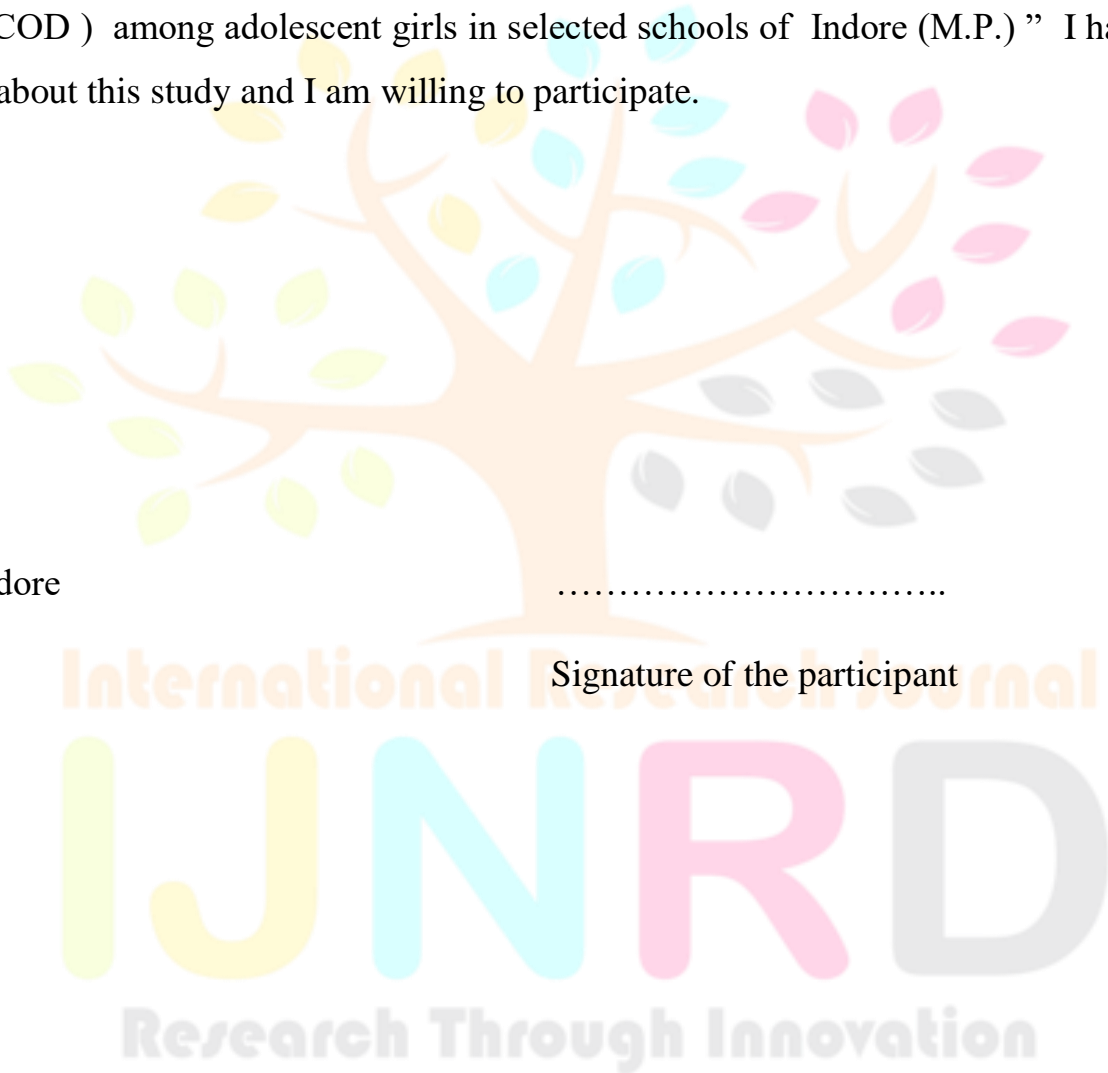
I ..... here by my consent for my participation in the study -“ A study to assess the effectiveness of structure teaching programme on knowledge regarding polycystic ovarian disease (PCOD ) among adolescent girls in selected schools of Indore (M.P.) ” I have been explained about this study and I am willing to participate.

Place: - Indore

.....

Date: -

Signature of the participant



**Appendix-V****Tool**

**Description of the tool: Structured Knowledge Questionnaire** Consists of

**Section- A**:-Baseline Performa

**Section- B**: - Knowledge questionnaire on polycystic ovarian disease.

**Section- A**— Baseline Characteristics**Instructions:-Dear Participant,**

Please read the following questions and place a tick mark ( ✓ ) against the appropriate response in the space provided. The information provided by you will be kept confidential.

1). Age in year

- |                 |        |
|-----------------|--------|
| a. ≤ 13         | [    ] |
| b. 14-15        | [    ] |
| c. 16 -17       | [    ] |
| d. 18 and above | [    ] |

2).Number of Female family members

- |                |        |
|----------------|--------|
| a. 1           | [    ] |
| b. 2           | [    ] |
| c. 3           | [    ] |
| d. More than 3 | [    ] |

3).Religion

- |              |        |
|--------------|--------|
| a. Hindu     | [    ] |
| b. Christian | [    ] |
| c. Muslim    | [    ] |
| d. Other     | [    ] |

4). Type of family is...

- a. Nuclear [ ]
- b. Joint [ ]
- c. Extended [ ]
- d. Other [ ]

5).Family monthly income...

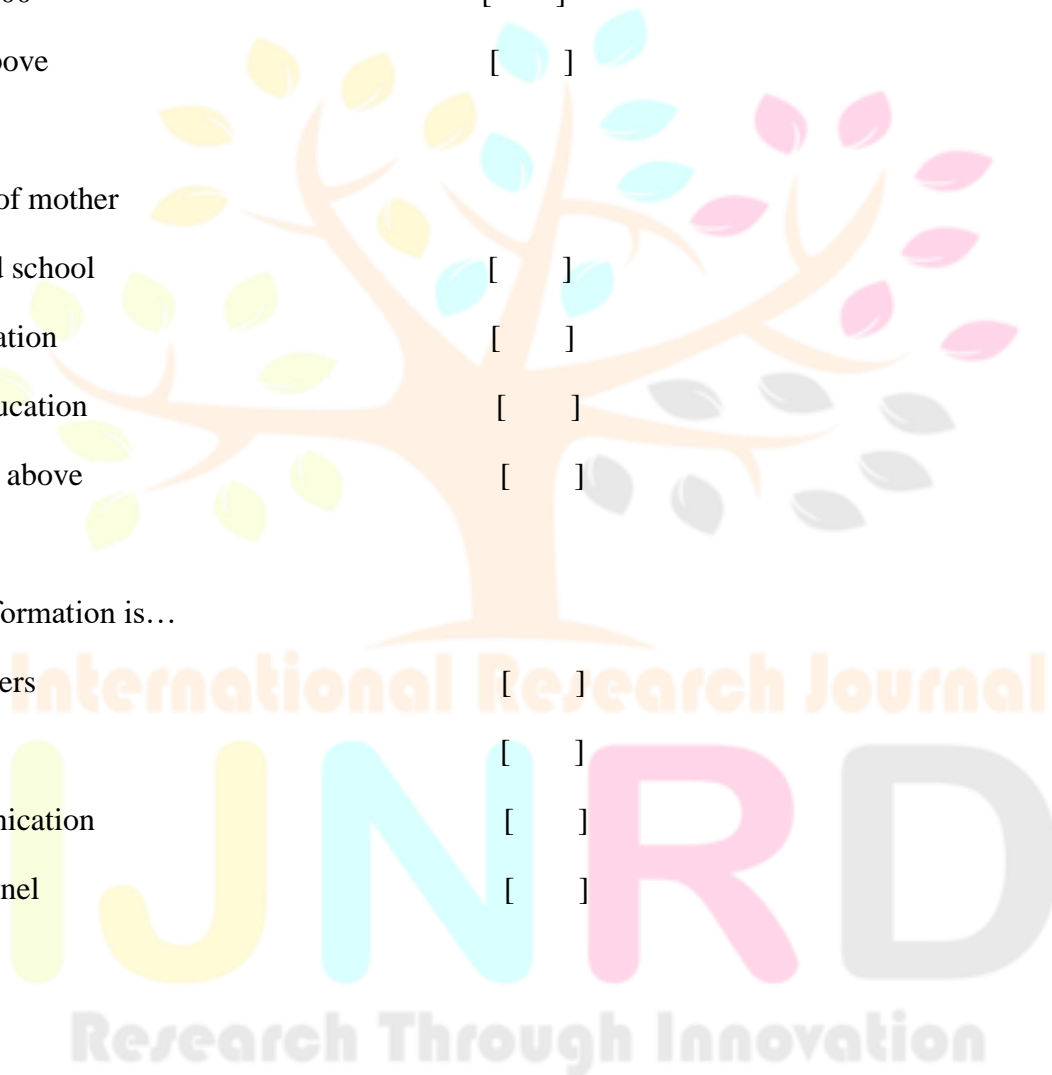
- a. RS-≤ 3001-5000 [ ]
- b. RS-5001-7000 [ ]
- c. RS- 7001-10000 [ ]
- d. 10,001 and above [ ]

6). Educational of mother

- a. Did not attend school [ ]
- b. Primary education [ ]
- c. Secondary education [ ]
- d. Graduation & above [ ]

7). Source of information is...

- a. Family members [ ]
- b. Peers [ ]
- c. Mass communication [ ]
- d. Health personnel [ ]



**Section- B:**

- Knowledge questionnaire on POLYCYSTIC OVARIAN DISEASE

**Instructions:-Dear Participant,**

Please read the following questions and place a tick mark ( ✓ ) against the appropriate response in the space provided. The information provided by you will be kept confidential.

# Knowledge Questionnaire

## Knowledge Questionnaire

1). Menarche is...

- a. The first menstrual cycle or first menstrual bleeding. [  ]
- b. Second menstrual cycle [  ]
- c. End of menstrual cycle [  ]
- d. Menopause [  ]

2). Duration of menstrual cycle is...

- a. 2 days [  ]
- b. 3days [  ]
- c.4 days [  ]
- d. 5days [  ]

3). Interval of menstrual cycle is...

- a. Less than 28 days [  ]
- b. 28 days- 30 days [  ]
- c. 30 days-32 days [  ]
- d. 32 days & above [  ]

4). Other name of menstruation is....

- a. Menses [  ]
- b. Menstrual bleeding [  ]
- c. Latemenia or period [  ]
- d. All of above [  ]

5). Age of puberty among Indian girls is...

- a. 11 - 12year [  ]
- b. 12 - 15year [  ]
- c. 10 - 14year [  ]
- d.16 - 18year [  ]

6). Full form of PCOD is—

- a. Poly cystic ovarian disease [  ]
- b. Poly cell ovarian disorder [  ]



c. Polycystic ovarian disturbance [ ]

d. Polycystic organ disease [ ]

7). Numbers of Ovaries present in pelvic cavity—

a. 2 [ ]

b.1 [ ]

c. 3 [ ]

d. 4 [ ]

8). Shape of the uterus is ---

a. Pear shaped organ [ ]

b. Round shaped [ ]

c. Bean shaped [ ]

d. Square shaped [ ]

9). Percentages of women affected by PCOD in their reproductive age is...

a. 2 - 3% [ ]

b.4 - 6% [ ]

c.7 - 10% [ ]

d.10 - 12% [ ]

10).Amount of blood Loss during menstruation is....

a. 10-80ml [ ]

b .50-80ml [ ]

c. 80-100ml [ ]

d. 40-80ml [ ]

11).The hormone mainly involved in proliferation phases is...

a. Progesterone [ ]

b. Estrogen [ ]

c. Follicle stimulating hormone [ ]

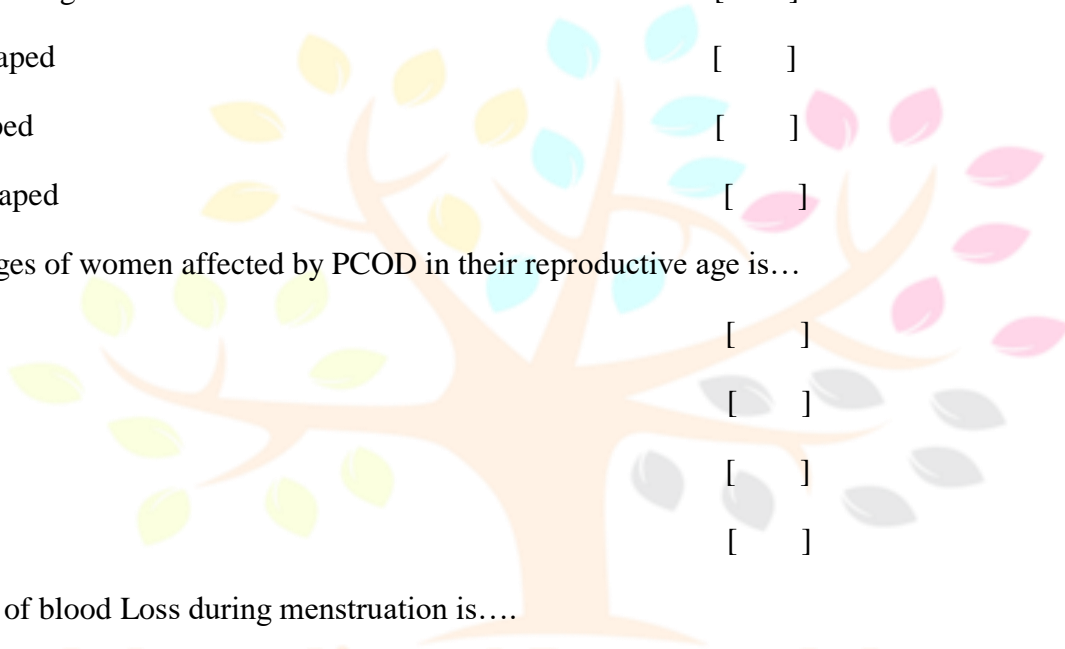
d. Growth hormone [ ]

12).Hormone produced by corpus luteum during secretory phase is...

a. Progesterone [ ]

b. Estrogen [ ]

c. Latinizing hormone [ ]



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Research Through Innovation

d. Oxytocin [ ]

13).The systems affected during PCOD is....

a. Metabolic [ ]

b. Digestive [ ]

c. Reproductive [ ]

d. All of above [ ]

14). Alopecia means is....

a. Colour change of hair [ ]

b. Loss of hair [ ]

c. Excessive of hair growth [ ]

d. Rough of hair [ ]

15).The organ to which uterus is connected

a. Fallopian tube [ ]

b. Urethra [ ]

c. Bladder [ ]

d. Kidney [ ]

16). Anovulation means is...

a. Increase of ovulation [ ]

b. Lack of ovulation [ ]

c. Pain full ovulation [ ]

d. Irregular ovulation [ ]

17). Common sing & symptoms of PCOD is...

A. Amenorrhea and obesity [ ]

b. Bleeding and metabolic disturbance [ ]

c. Obesity [ ]

d. Short hightendness [ ]

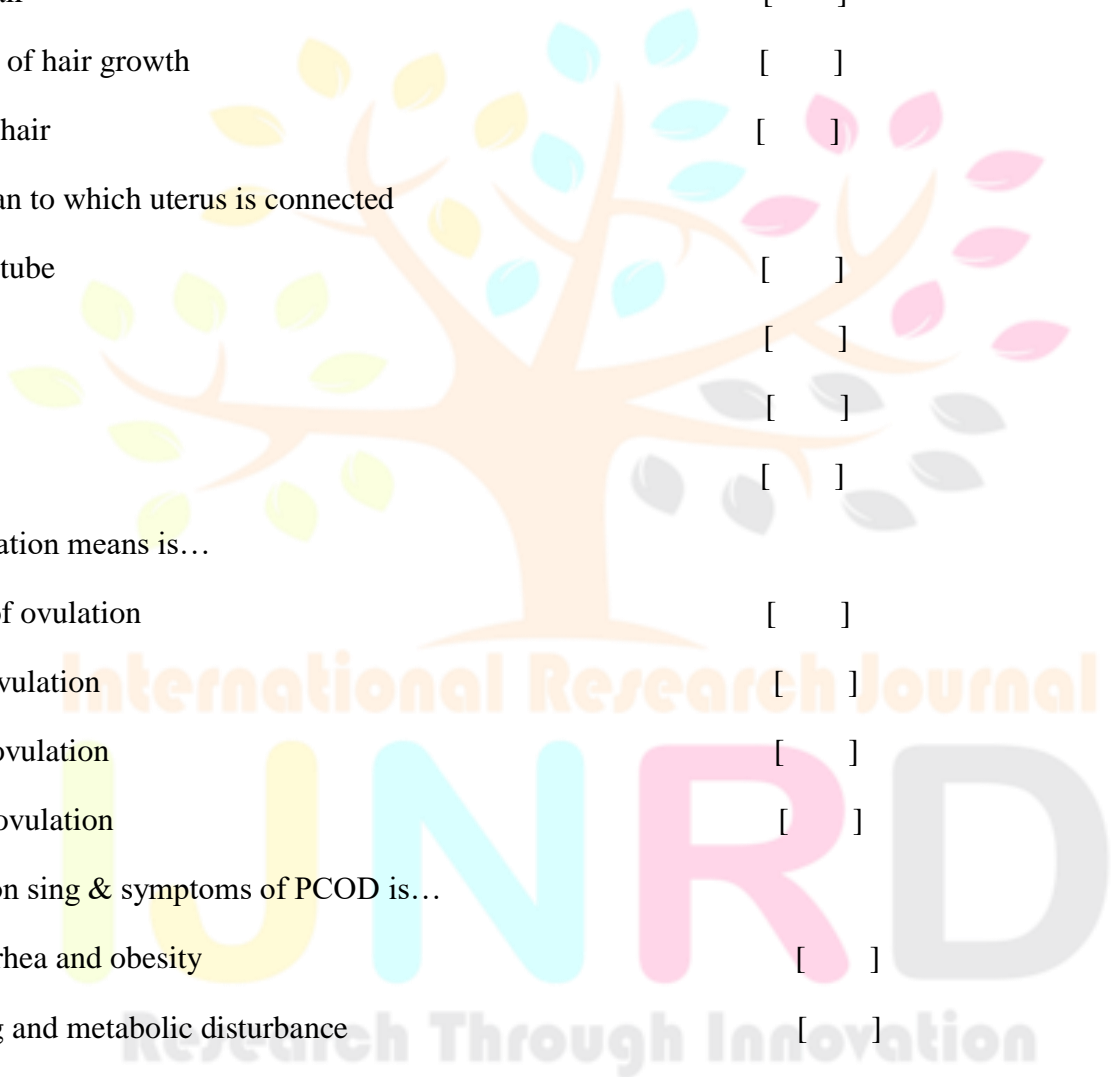
18). Cervix is the

a. Lower tubular part [ ]

b. Upper tubular part [ ]

c. Middle tubular part [ ]

d. All of above [ ]



19). Full Form of USG

- a. Ultrasonography [ ]
- b. Ultra system grapey [ ]
- c. Ultra simple grapy [ ]
- d. All of above [ ]

20). Dysmenorrhea means

- a. Disturbance of menstrual cycle [ ]
- b. Pain full menstrual cycle [ ]
- c. Irregular menstrual cycle [ ]
- d. Regulation of menstrual cycle [ ]

21). Ultrasonography is mainly for the diagnosed of pcod finding

- a. Transvaginal USG [ ]
- b. Abdominal USG [ ]
- c. Transcervical USG [ ]
- d. Non of above [ ]

22). Generally PCOD can be managed by

- a. Weight loss [ ]
- b. Exercise [ ]
- c. Avoid smoking [ ]
- d. All of above [ ]

23). The drugs used for enhancing testosterone secretion in female is

- a. ketoconazole [ ]
- b. Metronidazole [ ]
- c. Albendazole [ ]
- d. All of above [ ]

24). The surgery used to treat PCOD is....

- a. Laparoscopy [ ]
- b. Hysterectomy [ ]
- c. Laparotomy [ ]
- d. All of above [ ]

## Appendix–VI

### ANSWER KEY

1.	A	13.	D
2.	D	14.	B
3.	B	15.	A
4.	D	16.	B
5.	B	17.	A
6.	A	18.	A
7.	A	19.	A
8.	A	20.	B
9.	B	21.	B
10.	D	22.	D
11.	B	23.	A
12.	A	24.	D

**Appendix-IX****STATISTICAL FORMULA USED IN THE STUDY****Formula 1:-**

$$\text{Mean or } \bar{X} = \frac{\sum x}{n}$$

Where ' $\sum x$ ' the sum total of the mean score and 'n' is the number of samples.

**Formula 2:-**

$$df = n-1$$

**Formula 3:-**

Paired 't' test

$$t = \frac{\frac{\sum d}{N}}{\sqrt{\frac{\sum d^2 - \frac{(\sum d)^2}{N}}{N(N-1)}}$$

**Formula 4:-**

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

Standard deviation

**Formula 5:-**

1. Karl Pearson's correlation coefficient

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2} \sqrt{\sum (y - \bar{y})^2}}$$

2. Spearman Brown Prophecy

$$r_1 = 2r/1+r$$

$r$  = correlation coefficient computed on split halves

$r_1$  = the estimated reliability of the entire test.



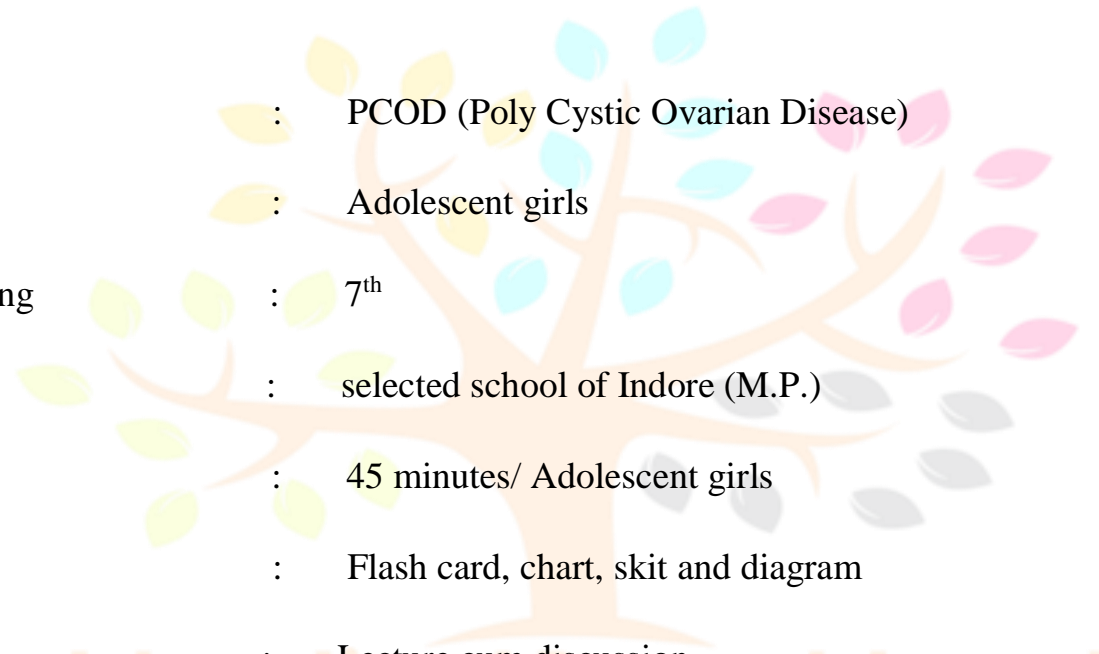
Demographic Variables								Pretest Score	Posttest Score
S. No.	Age	No. of Female Family Members	Religion	Type of Family	Monthly family income	Education of Mother	Source of Information		
1	B	b	a	a	b	b	a	14	22
2	C	b	a	a	a	a	c	7	19
3	C	c	a	a	b	a	c	8	17
4	B	C	a	a	b	a	c	13	18
5	D	b	a	b	C	a	b	8	20
6	B	c	b	a	b	c	a	6	21
7	B	d	a	b	b	a	a	7	17
8	A	d	a	b	c	b	a	13	19
9	A	d	c	b	c	a	a	12	21
10	C	a	a	a	b	a	c	7	17
11	C	d	a	b	c	a	a	8	18
12	B	c	a	a	c	b	c	10	17
13	C	b	a	a	b	a	b	8	18
14	B	d	d	b	d	a	a	12	19
15	A	b	a	a	a	a	b	11	20
16	C	a	a	a	b	a	c	14	21
17	B	d	c	b	d	a	b	13	20
18	C	d	a	b	c	a	a	8	17
19	D	c	a	b	c	a	a	5	17
20	A	d	c	b	c	a	b	14	19
21	B	b	a	a	b	a	b	13	20
22	A	b	a	a	d	a	d	8	20
23	B	c	a	a	b	a	b	6	17
24	C	b	a	a	b	c	c	5	17
25	C	b	a	a	b	a	d	7	18
26	A	c	a	a	c	a	a	6	17
27	D	b	c	a	a	a	a	14	20
28	D	d	c	d	c	a	c	16	20
29	C	d	a	a	c	a	b	7	17
30	B	b	a	a	C	a	d	7	18
31	B	d	a	b	b	a	c	5	19
32	C	d	a	b	c	a	b	4	17
33	B	b	a	a	a	b	c	8	19
34	B	a	a	a	b	a	a	4	17

35	A	b	a	a	c	a	a	8	20
36	B	a	a	a	a	c	c	3	17
37	C	b	b	a	b	b	a	1	17
38	D	a	a	a	c	b	c	3	19
39	C	a	a	a	c	b	c	2	20
40	B	c	a	a	c	b	b	5	17



## CONTENT FOR STRUCTURE TEACHING IN ENGLISH

### STRUCTURE TEACHING PROGRAMME



Topic	:	PCOD (Poly Cystic Ovarian Disease)
Group	:	Adolescent girls
Number of group for teaching	:	7 <sup>th</sup>
Place	:	selected school of Indore (M.P.)
Duration	:	45 minutes/ Adolescent girls
A.V. Aids	:	Flash card, chart, skit and diagram
Method of teaching	:	Lecture cum discussion

#### Previous knowledge:

The adolescent girls having some knowledge about the topic.

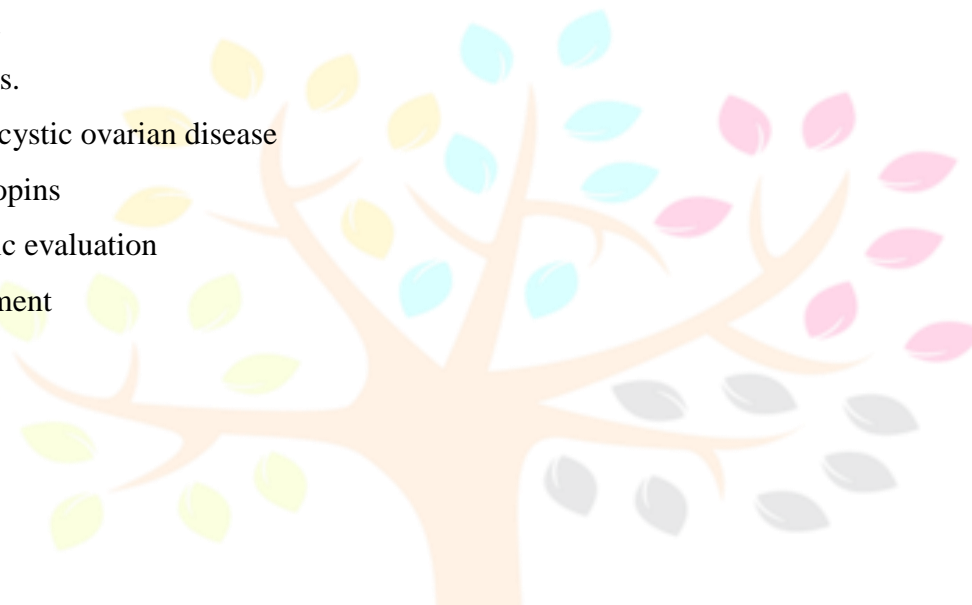
#### General objectives:

At the end of structure teaching programme, the group will be able to gain knowledge on PCOD (Poly Cystic Ovarian Disease).

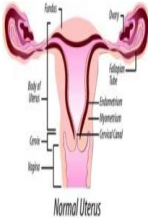
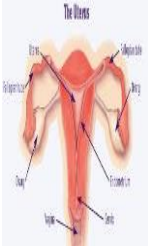
#### Specific objective:

At the end of the teaching, the Adolescent girls will be able to:-

- 1) Introduce the PCOD.
- 2) Anatomy & physiology of PCOD.
- 3) Explain about Puberty in the female.
- 4) Definition PCOD.
- 5) Describe about the menstrual cycle.
- 6) Describe about Etiology.
- 7) List of Sign & Symptoms.
- 8) Pathophysiology of polycystic ovarian disease
- 9) Explain about Gonadotropins
- 10) Describe about diagnostic evaluation
- 11) Describe about Management
- 12) Explain about life style
- 13) Conclude the topic.
- 14) Summary the topic.



S. NO	TIM E	SPECIFIC OBJECTIVE	CONTENT	TEACHING METHOD	LEARNING ACTIVITY	A V AIDS	EVALUATI ON
01	2min ute	Introducing of polycystic ovarian disease	<p><b>INTRODUCTION:-</b></p> <p>Polycystic ovarian disease is a let erogenous multisystem endocrinopathy in women of reproductive age with the ovarian expression of ovarian metabolic disturbance and a wide spectrum of clinical features such as obesity menstrual abnormalities and hyper androgynies. This disease was discovered by and amid as stain leventhal syndrome in 1935 to</p>	<p>Discussion</p> <p>And describe about the menstrual cycle</p>	Listening	Pamphlet	What you mean by PCOD

02	5 min	Explain the anatomy & physiology	<p>diagnose PCOD, adrenal and androgen secretory ovarian tumor should be excluded. PCOD affects 4 to 6 percent of women.</p> <p><b><u>Anatomy &amp; physiology</u></b></p> <p>The internal organs of the female reproductive system lie in the pelvic cavity and consist of the vagina, uterus, two uterine tubes and two ovaries.</p> <p><b>Vagina-</b> It is the passage, which allows the menstrual flow and the penis, enter into it during the sexual intercourse. It is a passage for the birth of baby during delivery.</p> <p><b>Uterus-</b> It is a pear shaped organ, which lies above the vagina. After intercourse, sperms enter into the uterus to meet the ovum. It provides shelter of the fetus during pregnancy and it grows for 9 month within this organ.</p> <p><b>Cervix-</b> It is the lower tubular part of the uterus, which protrudes into vagina.</p> <p><b>Body-</b> This is the main part. It is narrowest inferiorly at the internal as where it is continuous with the cervix.</p> <p><b>Uterine tubes /fallopian tubes-</b> these are two tubes situated on both ends of uterus. They are funnel shaped and have finger like structures at this ends.</p>	<p>describe about anatomy and physiology of female reproductive organs internal and external</p> <p>Explain about uterus</p> <p>Explain about cervix</p> <p>Explain about uterine tube</p>	<p>Listening</p> <p>Listening</p>	  <p>PPT</p>	<p>Explain about anatomy and physiology of reproductive organs</p> <p>Explain about uterus</p>
----	-------	----------------------------------	--	--	-----------------------------------	--	--

These tubes receives ovum after ovulation and transfer it into the uterus. During fertilization, the meeting of male and female reproductive cells will take place within these tubes.

**Ovaries-** there are two ovaries, which are, situated one on each side of uterus. Ovaries produce female egg cell called as ovum.

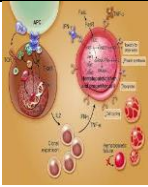
Ovary releases one matured ovum ... 10-12 days after menstruation. This process is called ovulation. They appear once of first menstrual period is called as menarche.

Puberty in the female- Puberty is the age at which the internal reproductive organs reach maturity. This is called menarche. Marks the beginning of the child childbearing period ovaries are stimulated by gonadotropin from anterior pituitary follicle stimulating hormone luteinizing hormone.


The age of puberty varies between 10 and 14 years and a number of physical and psychological changes take place at this time.

- The uterus, the uterine tubes and the ovaries reach maturity.
- The menstrual cycle and ovulation begin (menarche).
- The breasts develop and enlarge.

03	5min	Discuss the menstrual cycle	<ul style="list-style-type: none"> <li>• Pubic and axillary hair begins to grow. Increase in height and widening of the pelvis.</li> </ul> <p>Increase fat deposited in the subcutaneous tissue especial at the hips and breasts.</p> <p><b>THE MENSTRUAL CYCLE-</b></p> <p>The menstrual cycle is the regular natural change that occurs in the female reproductive system like the uterus and ovaries that make pregnancy possible.</p> <p>The cycle is required for the preparation of oocytes and for the preparation of the uterus for pregnancy.</p> <p>Up to 80% of woman report having some symptoms during the one to two weeks prior to menstruation.</p> <p>Common symptoms include acne, tender breasts, bloating Feeling, irritability and mood changes.</p> <p>The first period usually begins between twelve and fifteen years of age. This time known as menarche.</p> <p>The uterine cycle is divided into menstruation, proliferative phase and secretory phase.</p>	Explain menstrual cycle	The students were asking questions	PPT	What do you mean by menstrual cycle
04							

2min		<p><b>1. Menstruation-</b> Menstruation (also called menstrual bleeding, menses, catamenia or a period) is the first phase of uterine cycle</p> <p>The flow of menses normally serves as a sign that a woman has not become pregnant.</p> <p>Amenorrhea denotes normal regular menstruation that lasts for a few days (usually 3 to 5 days, but anywhere for 2 to 7 days is considered normal). The average blood loss during menstruation is 35 milliliters with 10-80 ml considered normal.</p> <p>Painful cramping in the abdomen, back or upper thighs is common during the first few days of menstruation. Severe uterine pain during menstruation is known as dysmenorrhea, and it is most common among adolescents and younger women (affecting about 67.2% of adolescent females).</p> <p><b>2. Proliferative Phase-</b></p> <p>The proliferative phase is the second phase of the uterine cycle when oestrogen causes the lining of the uterus to grow or proliferate during this time. As they mature, the ovarian follicles secrete increasing amount of estradiol, and oestrogen. The oestrogen initiate the formation of a new layer of endometrium in the uterus,</p>	Explain about phases of cycle	The students were asking questions		What is proliferative phase?
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6.	2min	Explain the sign & symptoms	<p>oligomenorrhea or poligomenorrhea and infertility.</p> <p>The underlying cause of PCOD is unknown. In PCOD ovary fails to develop a mature egg and generate only multiple immature follicles. Due to these multiple cysts hormonal imbalance occurs multiple causes are responsible for these multiple cyst just like diet, stress, overweight etc.</p> <p>PCOD has been form in women who have-</p> <ul style="list-style-type: none"> <li>❖ Family history of ovarian cysts.</li> <li>❖ Overactive pituitary glands.</li> <li>❖ Over production of insulin and testosterone.</li> <li>❖ Over-weight women.</li> <li>❖ No physical activity</li> <li>❖ Stressful life</li> </ul> <p>Metabolic disorder, including elevated blood fat (lipid) levels, insulin (glucose, sugar) and elevated blood pressure (hypertension).</p> <p><b>Sign &amp; Symptoms-</b></p> <ol style="list-style-type: none"> <li>1. Menstrual dysfunctions</li> <li>2. Hyperandrogenism (30%) this condition is typically manifested by-</li> </ol>	Teacher explain sign and symptoms of pcod			Explain the sign and symptoms of pcod
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- hirsutism- means growing dark terminal hairs distributed in male pattern.
3. Acne.
  4. Alopecia – this is common in PCOD.
  5. Other endocrine dysfunction.
  6. Dyslipidaemia- this classic atherogenic lipoprotein profile seen in PCOD is characterized by elevated low-density lipoprotein (LDL), triglyceride level, and total cholesterol.
  7. Obesity- compared with age-matched women with PCOD is more likely to be obese.
  8. Obstructive sleep apnea
  9. Infertility.
  10. Pregnancy loss.
  11. Complication in pregnancy.
  12. Psychological health.
  13. Dysmenorrhea.
  14. Carbohydrate intolerance diabetes. Hypertension may develop pregnancy loss occurs in 20-30%.
  15. Facial hair appears the upper lip, chin, breast and thigh.



07	3 min	Discusses the Pathophysiology of PCOD	<p>Decrease in female sex hormones this condition may cause women to develop certain male characteristics- Decrease in breast size, deeper voice, thin hair.</p> <p><b>Other Symptoms Include-</b></p> <ul style="list-style-type: none"> <li>➤ Weight gain</li> <li>➤ Pelvic pain</li> <li>➤ Anxiety or depression</li> <li>➤ Infertility</li> </ul> <p>While not symptoms of the disease may women with PCOD have other concurrent health problems such as DM, HTN, High cholesterol</p> <p><b>Pathophysiology of polycystic ovarian disease-</b></p> <p><b>Gonadotropins-</b></p> <ul style="list-style-type: none"> <li>❖ Anovulation in woman with PCOS is characterized by inappropriate Gonadotropins secretion specifically alterations in gonadotropin releasing hormone (GnRH) pubatality lead to preferential produce to luteinizing hormone compared with follicle stimulating EF hormone ( FSH). In other case serum LH levels rise and increased level are observed clinically in appropriately 50% of affected woman</li> </ul>	Explain about Pathophysiology of pcod	chart	Explain the Pathophysiology of pcod
----	-------	---------------------------------------	--	---------------------------------------	-------	-------------------------------------

08	2min	Enumerate the Diagnosis of PCOD	<p>similarly luteinizing hormone follicle stimulating hormone are elevated and rise above of approximately 60% of patient.</p> <p>❖ <b>Insulin Resistance-</b> Women with PCOD with also display greater degrees of insulin resistance and compensatory hyper insulin than non-affected women. Insulin resistance is defined as a reduced glucose uptake response to given amount of insulin the mechanism of this decreased insulin sensitivity appears to be due to a post binding abnormality in insulin receptor. Obese women with PCOD are found to be more insulin resistant than non-attached weight. Maternal controls.</p> <p>❖ <b>Anovulation</b> – Although androgen level are typically elevated in women with PCOD progesterone levels are low due to anovulation the precise mechanism leading to anovulation under but hyper secretion of LH has been implication in menstrual irregularity.</p> <p><b>Diagnostic Evaluation:-</b></p> <p><b>Look for-</b></p>	Describe the diagnostic evaluation pcod	The students were asking questions		<p>What do you mean by Anovulation?</p> <p>How to diagnose the pcod?</p>
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- Obesity.
- Thyroid enlargement.
- Hirsutism and acne.
- Blood pressure in obese women.
- Oligo/amenorrhea, Anovulation, infertility.
- Ultrasound finding (see below under investigation).

**Ultrasonography:-transvaginal**

Ultrasonography is especially useful in obese patient ovaries are enlarged in volume ( $>10\text{cm}^3$ ). Increased number ( $>12$ ) of peripherally arranged cysts (2-9 mm) are seen

- ❖ **Serum Volumes:** - LH level is elevated and /or the ratio LH: FSH is  $>2:1$ .
  - Raised level of estradiol and estrone.
  - Hyperandrogenism mainly from the ovary but loss from the adrenals, androsterone is raised.
  - Raised serum testosterone ( $>150$  mg/dl)
  - Insulin resistance (IR) = raised fasting insulin level  $>25\text{u/u/Nl}$  and fasting glucose insulin ratio  $<4.5$  suggests IR (50%) level of serum



09	2min	Explain management of Pcod	<p>insulin response &gt;300 u/mm at 2 hours. Post glucose (75gm) local suggests severe IR.</p> <p>❖ <b>Laparoscopy:-</b>Bilateral polycystic ovaries are characteristic of PCOD.</p> <p><b>Management-</b> The purpose of treatment is-</p> <ol style="list-style-type: none"> <li>1. To cure a women with menstrual disorders.</li> <li>2. To treat hirsutism.</li> <li>3.To treat infertility</li> <li>4. To pregnant long term effect of X- Syndrome in later life.</li> </ol> <p>The treatment therefore is requirement of the women.</p> <p>❖ <b>Weight loss-</b> Weight loss of more than 5% of previous weight alone is beneficial in mild considerably weight loss mereases the secretion of six hormone binding globulin reduce insulin level and testosterone level.</p> <p><b>LIFE STYLE-</b></p> <p>❖ Cigarette smoking should be avoided.</p>	Describe the management of PCOD			What is the management for pcod?
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10	2min	conclusion the topic	<ul style="list-style-type: none"> <li>❖ Hormones to control menstruation are oral combined pills and spironolactone.</li> <li>❖ <b>Ketoconazole</b> 200mg daily reduces testosterone secretion.</li> </ul> <p>Oestrogen suppresses androgens and adrenal hormones it raises the secretion of SHBG in the liver which binds with testosterone thus reducing free testosterone. It also suppress LH. It is best given as low dose combined pills having progestogen with lesser androgen effect fourth generation of combined pills which contains 30 mg E<sub>2</sub> and 2-3mg drospirenone. (Progestogen with ant androgenic action) is best PCOS (Yasmin, janya, turana). It help to reduce acne and further development of hirsutism it presents water retention and reduced weight is maintains lipid profile.</p> <ul style="list-style-type: none"> <li>➤ Progestogen may be required to induce menstruation in amenorrhea women prior to initiating hormonal cyclic therapy.</li> </ul> <ul style="list-style-type: none"> <li>❖ <b>Surgery:</b> - laparoscopy.</li> <li>❖ Laparotomy.</li> <li>❖ Ovarian drilling.</li> </ul> <p><b>CONCLUSION:-</b></p>				
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11	2 min	Summarized the topic	<p>PCOD is ovarian disease mainly of 18 to 45 years woman. In this disease woman don't pregnant. Lack of ovulation due to life style change of Woman. On this disease woman is obesity ancient or tension and infertility.</p> <p><b>Summary:-</b></p> <p>Thus the PCOD in the teaching of adolescent girls include are-</p> <ol style="list-style-type: none"> <li>1) Introduce the PCOD.</li> <li>2) Anatomy &amp; physiology of PCOD.</li> <li>3) Explain about Puberty in the female.</li> <li>4) Definition PCOD.</li> <li>5) Describe about the menstrual cycle.</li> <li>6) Describe about Etiology.</li> <li>7) List of Sign &amp; Symptoms.</li> <li>8) Pathophysiology of polycystic ovarian disease</li> <li>9) Explain about gonadotropins</li> <li>10) Describe about diagnostic evaluation</li> <li>11) Describe about Management</li> <li>12) Explain about life style</li> <li>13) Conclude the topic.</li> </ol>				
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			<b>14)</b> Summary of the topic				
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- 3 London I. marica and Patrica, w. ladeing newborn and child nursing family centered care.6<sup>th</sup> ed. Sudbury: Pearson education (preticeHall) 2003.
- 4 Pr ashalata g deepa text book of anatomy & physiology for nurse 4 edition published by jayvee brother medical publisher (p) ltd. 470 487
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