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AWARENESS REGARDING POLYCYSTIC OVARIAN DISEASE AND ITS RISK ASSESSMENT AMONG COLLEGE STUDENTS

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Awareness regarding Polycystic Ovarian Disease and its Risk Assessment among College Students

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ABSTRACT

Polycystic Ovarian Disease is a prevalent hormonal disorder seen among adolescent girls. The current study was aimed to assess awareness regarding Polycystic Ovarian Disease and its risk assessment among college students. The objectives of the study were to assess the awareness regarding PCOD among college students, assess the risk of PCOD among college students and to find the association between awareness regarding PCOD and selected socio personal variables of college students. The research question was What is the awareness regarding PCOD and its risk assessment among college students? A descriptive survey design was used for the study which was based on Nola J Pender's Health Promotion model. Pilot study was conducted among 15 college students at Sree Paramekavu College and the main study was conducted among 145 students at St. Thomas College. The tools used were structured questionnaire to assess the socio demographic variables, awareness regarding Polycystic Ovarian Disease and questionnaire for risk assessment which includes weight, height and BMI. The findings of socio personal data showed that 39.31% belonged to the age of 20, 53.1% studying in 2nd year, 78.62% was staying in home, 96.55% was consuming junk foods, 66.21% had previous knowledge about Polycystic Ovarian Disease, 33.79% had no source of information, 89.66% had no PCOD. Among 15 students with Polycystic Ovarian Disease, 33.34% had PCOD since 3 year, 60% were not taking medicines and all of the them had done lifestyle modification. The assessment of awareness revealed that 66.9% of college students had average awareness whereas 26.9% had poor awareness and 6.2% had good awareness, and risk assessment showed that 73.1% students was having moderate risk and 26.2% was having low risk for Polycystic Ovarian Disease and 0.70% had high risk for Polycystic Ovarian Disease. There is significant association between awareness regarding Polycystic Ovarian Disease and year of study, other variables such as type of stay, presence of PCOD, previous information of PCOD and its source showed no significant association between awareness regarding Polycystic Ovarian Disease. Discussion indicates the importance of implementing targeted educational interventions, promoting lifestyle modifications and

enhancing reproductive health literacy among young women could help bridge these knowledge gaps and reduce PCOD risk in the college going population. The study concluded that awareness regarding Polycystic Ovarian Disease and its risk assessment helps in early detection of health problems thereby preventing long term health complications.

Key words: awareness; Polycystic ovarian disease; risk assessment; college students

CHAPTER-1
INTRODUCTION

"I am more than my PCOS. I am strong, resilient, and capable." - PCOS Awareness Association

Polycystic Ovarian Disease (PCOD), also known as Polycystic Ovary Syndrome (PCOS) or Stein-Leventhal Syndrome, is a prevalent endocrine disorder affecting among women of reproductive age. First identified by Stein and Leventhal in 1935.[1,2] PCOD/PCOS can impact both physically and mentally and can cause various long-term health complications. This is a condition which has a familial predisposition with increased prevalence in certain ethnic groups [3].

PCOD affects approximately 4–20% of women in reproductive age worldwide. An analysis of 27 surveys showed a global pooled prevalence of 21.27%, varying based on diagnostic criteria. Additionally, the prevalence of PCOD has risen over the past decade.[4] The overall prevalence of PCOD in India is highest with 8.1% according to the Rotterdam criteria.[5]

Adolescence is a critical phase, where the onset of PCOD gets marked, although diagnosis is done later due to varied symptoms and reluctance to seek medical help, this is particularly seen among adolescents.[6]

Hirsutism is a widespread issue affecting women in India, due to PCOD. However, only a fraction of affected women seek treatment, typically recognizing the problem when they encounter infertility issues. PCOD is a common issue seen among teen girls and young women, leading to irregular periods. The exact cause of PCOD remains elusive, but modern lifestyle factors such as poor dietary habits and lack of exercise are believed to contribute significantly [7,8]

Teenagers may exhibit a range of PCOD symptoms such as irregular or absent periods, heavy bleeding, ovarian cysts, hirsutism, alopecia, acne, skin tags, fatigue, depression, and anxiety. Overweight teens are particularly at risk. About 40% of women with PCOD may develop impaired blood glucose or type 2 diabetes by age of 40, attributed in part to elevated insulin levels, promoting fat storage (obesity).[8] PCOD is usually associated with obesity, excessive hair growth due to high testosterone levels, male pattern baldness, and acne. Elevated insulin levels in PCOD stimulate the ovaries to produce excess testosterone, potentially inhibiting monthly egg release and leading to infertility. Diagnosis typically involves pelvic ultrasound, with criteria including polycystic ovaries, menstrual irregularities and hyperandrogenism.[9]

8–13% of women affected with PCOD often goes undiagnosed and can lead to fertility issues due to irregular ovulation. This condition is linked to long-term health issues affecting both physical and emotional well-being. Lifestyle changes such as increased physical activity and weight loss exceeding 5% of previous weight, are the primary treatments for PCOD. Such interventions enhance menstrual regularity, reduce androgen levels, enhance lipid and glucose metabolism, and may facilitate spontaneous pregnancy.[10]

The contribution to the disease's occurrence is insufficient awareness and negative lifestyle attitudes towards PCOD, and lack of proactive measures to improve their lifestyles among college aged girls. Prevention of PCOD holds greater significance than treating the disease after onset. Increased understanding of the condition can empower individuals to adopt positive health behaviours.[11]

Need and significance of the study

Polycystic ovarian disease (PCOD) is a common hormonal or endocrinal disorder affecting women of reproductive age. It often begins during adolescence; its symptoms can vary and change over time. It is a extensive public health concern among reproductive women. Around 6–13% of women in this group, with up to 70% of cases remains undiagnosed. The prevalence of PCOD varies across ethnicities, with certain groups experiencing more severe complications, particularly metabolic issues. Pronounced hyperandrogenism, metabolic disturbances and most severe phenotype is exhibited by Hispanic women with PCOD. PCOD has become a cause of ovulatory issues and infertility. Various long-term health challenges is associated with this condition. It tends to run in families, with variations in its presentation and impact across different ethnic backgrounds.[3]

PCOD is a hormonal disorder which lead to imbalances, irregular menstrual cycles, elevated levels of androgen and ovarian cysts. The lack of ovulation is also associated with irregular periods often makes conception challenging, that may lead as cause of infertility. It is a chronic condition with no cure, its symptoms can be managed through lifestyle modifications, medications and fertility treatments. The exact cause of PCOD remains unknown. Women with a family history of PCOD or type 2 diabetes have an increased risk of developing this condition. Beyond its physical effects, it can also impact mental health, as issues related to obesity, body image and infertility may contribute to emotional distress and social stigma.[12]

The prevalence and awareness of Polycystic Ovarian Syndrome (PCOS) a cross sectional study yielded significant insights among female participants, approximately 28.5% reported having a formal PCOS diagnosis, while 40.5% of those without a diagnosis experienced at least two associated symptoms. Notably, the majority of respondents 66.3% of women and 83% of men rated their knowledge of PCOS as “limited” or less.[13]

The primary source of information is healthcare professionals for women diagnosed with PCOS, cited by 83.7% of participants. Notably, the least demographic likely to utilize healthcare resources are Hispanics, with only 36% seeking information from such sources and they were also less prone to seek information from family and friends (17.6%). Furthermore, differences in information seeking behaviour were observed based on educational attainment[14]

Indian studies, a comprehensive review from 2010 to 2021, utilizing the databases like Pub Med, CINHAL, Scopus, and Google Scholar, was conducted to determine the prevalence of Polycystic Ovary Syndrome (PCOS) in Indian women. Out of 17,132 articles screened, 11 met the inclusion criteria for systematic review and meta-analysis.

In Indian women the pooled prevalence of PCOS was found to be 11.33% (7.69-15.59) using a random effects model. Hirsutism prevalence, assessed using the Ferriman-Gallwey score, varied widely from 1.6% to 37.9% across six studies. Notably, the pooled prevalence of PCOS was approximately 10% using Rotterdam's criteria and Androgen excess society (AES) criteria, whereas it was lower at 5.8% using National Institute of Health (NIH) criteria.[15]

A study conducted on prevalence of PCOD in Kerala in 2020 among 120 women, 75 women were unmarried and 45 were married. Among them 2 of the them had subclinical hyperandrogenism. Dehydroepiandrosterone (DHEA) was increased in 70 women. FSH: LH ratio > 2:1 seen in 84 women. Testosterone was normal. Anti- Mullerian Hormone was raised in 84 women, indicating hyperandrogenism. Serum Prolactin was normal in most women except in 2 women. This review shows the substantial prevalence of PCOS among Indian women and highlights the variability in diagnostic criteria and assessment methods. The findings emphasize the importance of establishing more consistent and standardized diagnostic criteria for PCOS screening. Policymakers should prioritize PCOS within efforts targeting non-communicable diseases.[16]

A study on Health related complications associated with Polycystic Ovarian Disease (PCOD), showed that PCOD is associated with psychological and metabolic disturbances. Through this the complications associated with PCOD are depression, anxiety and reduced health-related quality of life (HRQOL) among women with PCOD was studied. The study had 100 PCOD patients. It was done by standardized questionnaires assessing depression and anxiety by HADS. Patients also completed a PCOD HRQOL

questionnaire. The other complications associated are like weight gain, obesity, abortion, irregular bleeding, infertility, acne, acanthosis nigirians, TSH abnormalities, hirsutism and hair fall are assessed by patient history interview, case record analysis and from laboratory values. It shows that 42% of the patients were aged between 22-26. On Body Mass Index analysis, 60% of the patients were having BMI of 18.5 – 25, 17-21 age grouped patients were having high BMI Score (obese). Analysing the complications of PCOD indicate that 78% of women having irregular menstrual cycle, 68% having weight gain, 44% having hirsutism, 36% having anxiety, 32% having acne and acanthosis nigricans, 22% having hair fall, 16% having infertility and depression, 10% having TSH abnormality and 6% having abortion history. According to the data, PCOD patients under the age group of 22-26 were more susceptible for the complications. HADS score shows that 52% have score in between 11-21 (abnormal), were 36% having anxiety and 16% having depression. Evaluation of Quality of Life among PCOD patients indicated that 52% of patients scored medium quality of life. So early identification of PCOD is important.[17]

Present studies shows that lifestyle, especially diet, deserves special attention. Sleep quality, physical activity and stress reduction is also important. First choice of treatment should be diet. If only dietary intervention does not bring results, the doctor considers pharmacotherapy. Recently, acupuncture and herbal medicine, vagus nerve stimulation has used as a choice in the treatment of PCOD and regulation of hormone levels. For improving the quality of functioning, patients are given supplementation, but it must be remembered that inappropriate doses or too long use may result in a toxic effect opposite to the therapeutic one. Appropriate diet, physical activity especially lifestyle changes are crucial in the treatment of PCOD. Supplementation and pharmaceuticals support treatment. It is mandatory to examine these environmental and lifestyle factors as they not only contribute to the occurrence of the disease but also influence its progression.[18]

Statement of the problem

A study to assess the Awareness regarding Polycystic Ovarian Disease and its Risk Assessment among College Students, Thrissur.

Research Question

What is the awareness regarding PCOD and its risk assessment among college students?

Objectives

1. Assess the awareness regarding PCOD among college students.
2. Assess the risk of PCOD among college students.
3. Find the association between awareness regarding PCOD and selected socio personal variables of college students.

Operational definitions

Awareness regarding PCOD- It refers to knowledge regrading risk factors, clinical manifestations, lifestyle modifications of PCOD which is measured by structured questionnaire.

College students- It refers to the girls who is enrolled in a college or university for a degree program at Thrissur.

Risk assessment – It refers to the process of identifying risk factors such as family history of Diabetes mellitus, PCOD, stress related factors, regular exercise, consuming junk foods, taking hormonal treatment and use of any other medications. This is measured using structured questionnaire and it also includes measuring physical parameters such as waist hip ratio, BMI.

Selected socio personal variables – It includes age, year of study, type of food, type of stay, previous information regarding PCOD, its source, whether diagnosed with PCOD and duration of diagnosis with PCOD if any.

Hypothesis

Tested at 0.05 level of significance

H_1- There is a significant association between awareness of Polycystic Ovarian Disease and selected socio personal variables among college students.

Assumptions

Good awareness regarding PCOD and its risk assessment may help in early identification and preventive aspects of PCOD.

Conceptual framework

Framework is set of ideals that guides the entire research process.

The conceptual framework for this current study, "The Awareness Regarding Polycystic Ovarian Disease and Its Risk Assessment Among College Students, Thrissur," is grounded in Nola Pender's Health Promotion Model (revised in 2002). Originally developed in the early 1980s, Pender's model aims to integrate nursing and behavioural science theories to enhance personal health and well-being. This multidimensional model aligns with the principles of health promotion outlined by the World Health Organization (WHO) and incorporates key constructs from both social cognitive theory and the health belief model.

Health Promotion Model identifies that personal characteristics and experiences uniquely influence individual actions. Behaviour specific cognitions and affect, plays a crucial motivational role and nursing actions can shape these variables. The ultimate goal is health-promoting behaviour, leading to improved health, enhanced functionality and better quality of life. Yet, immediate demands and personal preferences can intersect, potentially altering intended health promoting behaviours.

Pender's Health Promotion model focuses on following three areas

- Individual characteristics and experience
- Behavioural specific cognition and affect
- Behavioural outcomes

Health promotion- Health promoting behaviour of a person aims for achieving optimal wellbeing and knowing one's own health potential. This approach emphasizes on wellness and personal empowerment and helps to take proactive strategies for enhancing overall health and quality of life.

Health protection: Health protection includes taking proactive measures or behaviours to prevent illness, facilitate early detection and preserve proper functioning of health.

1. Individual characteristics and experience

The components under individual characteristics and experiences include the following-

a. Prior related behaviours: A person's past experiences or actions that influence the current or future behaviour. This include previously engaged in regular exercise or correct dietary pattern, which may predict their likelihood of starting new habits.
b. Personal factors: It includes biological, psychological and socio cultural aspects, which plays a crucial role in predicting and shaping one's behaviour. These factors, include where we live, the state of environment, genetics, our income and education level and our relationships with friends and family. It helps in attaining an optimal desired result. After recognizing the individuals can modify their behaviours which help to improve quality of life.

Personal factors have three domains. Biological factors include age, gender, Body Mass Index (BMI), pubertal status and balance. Psychological factors comprise self- esteem, self-motivation, personal competence, perceived health status, health definition, mental wellbeing and emotional intelligence Sociocultural factors encompass race, ethnicity, education level, socioeconomic status, cultural norms, social support networks and environmental influences. These interconnected factors help in shaping individual behaviors, impacting health outcomes and wellbeing.

2. Behaviour specific cognitions and affect

It is a network of interconnected aspects of an individual's thoughts, feelings and action that influence their health choices.

The components include the following,

Perceived benefits of action: It refers to an individual's belief about positive outcomes or anticipating to take specific health promoting behaviour, that help them to engage in action that improve their overall health.

Perceived barriers of action: Obstacles to action that hindrances or that may discourage an individual from engaging in health-promoting behaviors

Perceived self-efficacy: It is an individual's belief in his own ability to achieve a goal and their confidence in planning and executing health promoting behaviors. Perceived self-efficacy influences perceived barriers to action, so higher efficacy results in lowered perceptions of barriers to the behavior's performance. If self-efficacy is high, individuals are more likely to manage challenges and they gain in a motivation to engage in healthy behaviors. Otherwise, low self-efficacy can exacerbate perceived barriers, hinders behavioral adoption.

Activity related affect: It refers to an individual's subjective feeling. It can be positive or negative feeling that an individual experience before, during and after engaging in a specific health-promoting behavior, that significantly influence their perceived self- efficacy and likelihood of continuing that behavior. It is essentially, how good or bad someone feels about doing an activity impacts their motivation to do it again.

Interpersonal influences: It refers to an impact of social relationships, interactions with others and the social environment of an individual's health promoting behaviors. An individual learns through observation learning or modelling, it also plays a crucial role, where individuals learn by witnessing others. The interpersonal influences comprise of family members, peers and healthcare providers, whose beliefs, values, and actions can significantly impact an individual's motivations and adoption of health promoting behaviors.

Situational influences: It refers to the external factors or immediate circumstances that can impact an individual's decision to engage in health promoting behaviors, including availability of healthy options, social norms within a particular setting, or the level of support from peers or family in a given situation. Situational influences can affect both directly and indirectly on health promoting behaviors.

3. Behavioural outcome

Behavioural outcome refers to observational change in an individual's actions or habits that results from a health intervention.

The components include:

Commitment to plan of action: It refers to an individual's strong resolve to a specific set of health related behaviors outlined in a personalized plan, signifying their dedication to actively improving their health by consistently participating in the chosen activities. Strategies are important because commitment often results in "good intentions" and not in actual performance of behaviour.

Committing to a plan is key to make intentions into real health habits. This process involves both making a commitment and planning specific actions. By setting clear steps and backup plans, people can stick to their goals and build healthy behaviors. Good planning helps turn intentions into actions, making the shift from commitment to practice easier.

Application of Health promotion model in this study

The conceptual framework of this study is based on the concepts of Revised Pender's Health Promotion Model (2002). This model explains about the multidimensional nature of persons as they interact with their environment to pursue health. This model notes that each person has their own unique personal characteristics and experiences that affect subsequent actions. Health promoting behaviour is the desired behavioural outcome and ends in the Health Promotion Model. Improved health, enhanced functional ability and better quality of life at all stages of development are the results of Health promoting behaviours. In this present study, the prior related behaviours are previous exposure to health

education about PCOD or related topics. Individual characteristics and experiences include personal factors such as biological, psychological and sociocultural factors. Biological factors like age, BMI, waist-hip ratio, family history of PCOD/diabetes.

Psychological factors include stress related factors, awareness level and motivation. Sociocultural factors include socioeconomic background, type of stay and lifestyle habits such as diet, exercise are included.

Perceived benefits of action include awareness of how lifestyle changes and early diagnosis can prevent PCOD and its complications.

Perceived barriers to action are lack of resources, limited knowledge about PCOD, or misconceptions. It includes lack of awareness, lack of practice, lack of exercise. The activity related affect is emotional response to learning about PCOD risks and health promotion strategies. It can be positive or negative response. Positive response means adopting measures to prevent the disease. Interpersonal influences include influence of peers, family and healthcare professionals on awareness and behaviour. Situational influences are availability of health education programs and support systems at the college. Situational factors can be direct or indirect influence on awareness. Immediate competing demands include external interruptions like academic workload, time constraint and preferences include personal choices or habits that may conflict with health goals which includes preference for junk food over healthy meals.

The investigator assessed prior related behaviour, biological, psychological and socio cultural factors, perceived barriers to health seeking behaviours, activity related affect, interpersonal influences, situational influences and immediate competing demands. Awareness regarding PCOD and its risk assessment make needed improvement and modification related to the care and services offered to college students. It helps the students to plan new interventions based on the findings and adopted new strategies for effective health care.

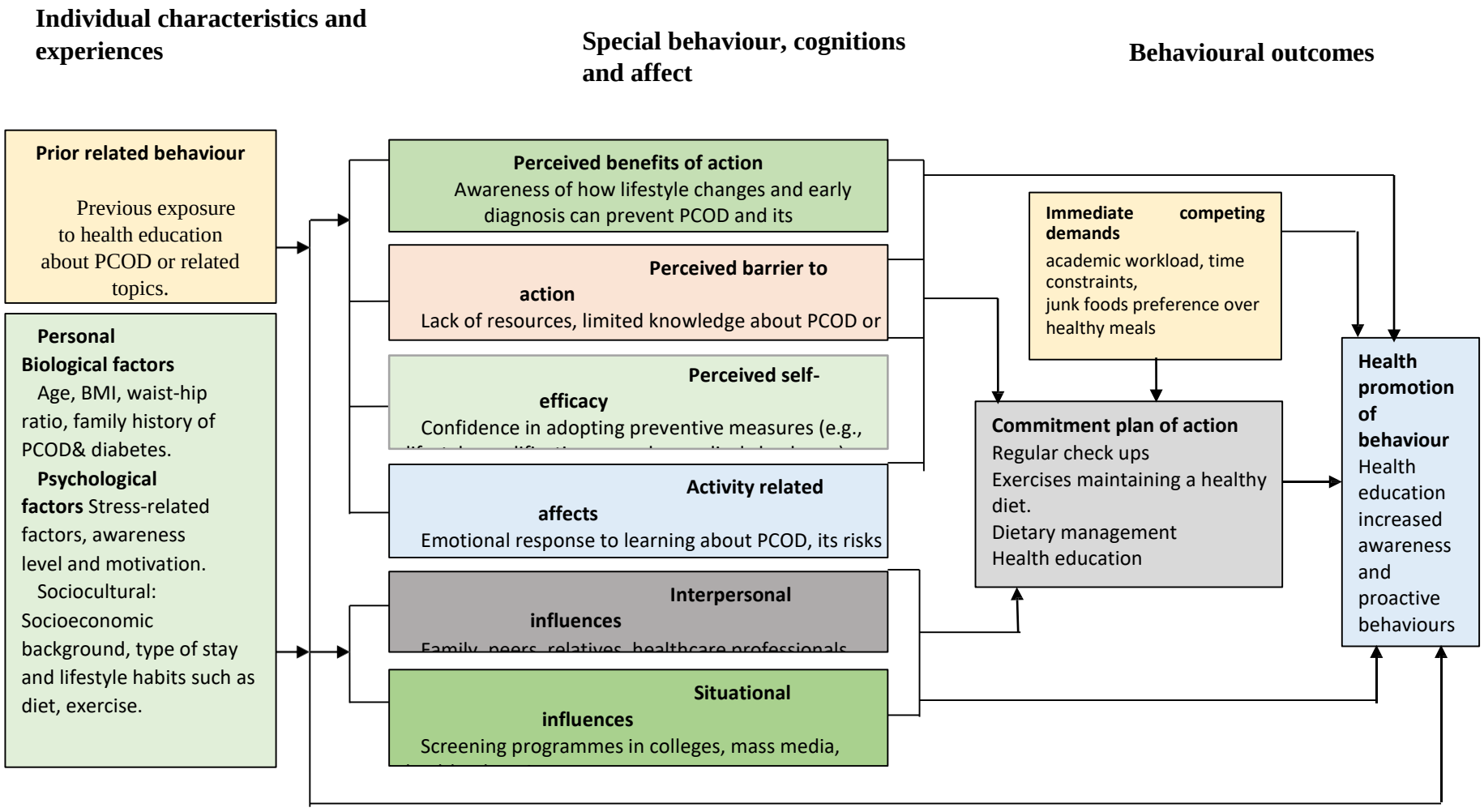

Figure 1: Conceptual framework based on Nola J Pender's revised Health Promotion Model (2002) to assess the awareness regarding PCOD and its risk assessment.

Review of Literature

Literature review is a systematic and comprehensive analysis of related literatures, both published and unpublished to throw light and clear the whole aspects of the study. It is performed before, during and after the study has conducted. So the study builds on previous research. An attempt is made to review the relevant literature regarding awareness regarding PCOD and its risk assessment.

Review of literature for the study has been organized under the following headings

a. Awareness regarding PCOD
b. Knowledge, perception and attitude of PCOD
c. Prevalence and attitude of PCOD
d. Assessment of risk factors of PCOD

Awareness regarding PCOD

A descriptive cross sectional study conducted at AIMS, Bilaspur on Awareness of Lifestyle Modifications in the Management of Polycystic Ovarian Disease, showed that among the 334 women who participated, 9.3% of participants were already been diagnosed with PCOD. The study shows that 43.4% of women had heard about PCOD, with doctors being the primary source of information (26.6%), followed by the internet (6.28%), teachers (5.6%) and friends (4.7%).Furthermore, participants were aware of various complications associated with PCOD, such as sub fertility (40.1%), abortions (34.4%), diabetes (28.7%), hypertension (31.7%), cardiovascular disease (33.5%), endometrial carcinoma (35.9%) and psychological disturbances (37.1%). They recognized that eating a healthy diet (37.1%) and weight reduction (41%) could aid in managing PCOD. Regarding knowledge levels, 60.5% of women exhibited poor knowledge, 14.7% exhibited fair knowledge and 24.9% demonstrated good knowledge regarding PCOD. Additionally, the study showed that there is a significant relationship between education level, occupation status and knowledge scores .[19]

A study conducted regrading Awareness on Exploration of Lifestyle Choices, Reproductive Health Knowledge of Polycystic Ovary Disease (PCOD) among female Students at Emirati University. The study revealed,13% of participants self-reported a diagnosis of PCOD, with 3.5% currently undergoing treatment for the condition. Additionally, 6% of respondents reported elevated androgen levels, while 30.7% experienced polymenorrhea and oligomenorrhea were reported by 3.5%, as frequency in terms of menstrual cycle. 12.4% of students showed abnormal menstrual bleeding (heavy or absent) and 24% noted abnormal growth of body hair. Regarding other health indicators, medicines for hyperglycaemia were taken by 4.3% of students and a significantly 75% had a family history of diabetes. Notably, the study revealed that reproductive health knowledge was low and poor awareness of PCOD among students. [20]

A study on Implementation of an Awareness Program and Lifestyle Intervention at Meenakshi Academy of Higher Education and Research, Chennai, India on Polycystic Ovarian Syndrome among Adolescent Schoolgirls. They assessed 120 school going adolescent girls from a government funded school in Southern India, among whom 40 were identified to have PCOS risk (36 with moderate risk and 4 with high risk). These 40 girls were divided into experimental and control groups, each consisting of 20 participants. Awareness program and lifestyle modifications were received by the experimental group (including yoga and exercise) conducted by the researchers in collaboration with school teachers at the school premises. Before the intervention, pretest knowledge assessment showed that 16 (80%) in the experimental group and 15 (75%) in the control group had 'moderate' knowledge. After the intervention, 15 (75%) participants in the experimental group had adequate knowledge compared to 9 (45%) in the control group. Regarding attitude, the pretest attitude score was 51.80% in the experimental group and mean 53.45 in the control group. Post intervention, the attitude score was mean 53.05 in the experimental group and mean 59.45 in the control group. The improvements in both knowledge and attitude scores indicate the effectiveness and feasibility of lifestyle interventions targeted at adolescent girls with PCOS risk, especially when implemented within school premises.[21]

A study on knowledge and awareness regarding Polycystic Ovarian Syndrome among nursing students in a tertiary care centre in South India. It was a questionnaire based cross sectional study conducted in Department of Obstetrics and Gynaecology. A predesigned, pretested, semi structured 15 item questionnaires with three components—knowledge about risk factors (6 items), clinical symptoms and signs (4 items) and complications (5 items)—data was collected online and analyzed. Among the 88 participating students, the majority (89.8%) identified PCOS as the most common endocrinological problem. Regarding knowledge of risk factors, 83 students recognized obesity as a contributing factor. However, awareness of long term complications was lower, 62 students (70.45%) aware of metabolic syndrome, 51 (57.95%) aware of hypertension, 50 (56.81%) recognizing susceptibility to diabetes mellitus and 60 (68.18%) acknowledging for risk of endometrial cancer. The findings highlight that, while nursing students had knowledge of PCOS risk factors, their awareness of its complications was significantly limited, underscoring the need for targeted educational interventions to enhance understanding of PCOS for them.[22]

A study to assess the risk status and to evaluate the effectiveness of an awareness programme on knowledge regarding PCOS and its management among adolescent girls in selected college at Mysuru". It was a pre-experimental one group pretest post test design. The sampling technique used is purposive sampling, to select 100 adolescent girls as participants. A risk assessment checklist was used to evaluate the participants' risk status and a structured knowledge questionnaire to assess their knowledge of PCOS and its management. The findings showed that the majority of adolescent girls (56%) were at moderate risk for PCOS. A significant difference in statistically was observed between the mean pretest and post test knowledge scores, analysed using a paired t-test, with a significance level of 0.05 ($t = 17.25$, $p < 0.05$). The results also indicated that the participant's knowledge of PCOS and its management showed a partial association with certain personal variables.[23]

A study to assess the effect of Structured Awareness Programme on Polycystic Ovarian Syndrome (PCOS) among Adolescent Girls. This observational study was carried out among 300 adolescent girls aged 14–18 years. A structured awareness program was provided to all participants and high risk individuals were screened using the Polycystic Ovarian Syndrome Questionnaire (PCOSQ) following the program. The findings revealed that 96.3% of the 300 adolescent girls were unaware of PCOS prior to the program. The PCOSQ results indicated that 32% experienced irregular menstrual cycles, 26.3% reported hirsutism and 13.2% noted weight gain. Overall, the study identified that the prevalence rate of PCOS is 12.3%. Additionally, 10.3% of them were classified as high risk, while 23.3% were categorized as low risk for developing PCOS.[24]

A study on Awareness of Polycystic Ovarian Syndrome among College Going Females in Gurgaon, conducted among 428 female students from 3 colleges in Gurgaon district, Haryana, India. Participants completed a self administered questionnaire capturing socio demographic information, menstrual cycle details and knowledge about PCOS. The mean age of the respondents was 19.9 ± 1.7 years, ranging from 18 to 24 years. Only 78 participants (18.22%) were aware of PCOS. Awareness was significantly associated with the mother's education level ($p = 0.001$), menstrual cycle length ($p = 0.022$) and a family history of PCOS [25]

A study on Awareness Regarding Polycystic Ovarian Syndrome among 100 Adolescent girls. The research tool used was self constructed questionnaire. Data analysis was done using statistical measures such as mean, frequency, percentage and One-Way ANOVA. The findings indicated there is no significant difference in the awareness levels about Polycystic Ovarian Syndrome (PCOS) among students from the B.A., B.B.A., and B.Des. programs. Awareness levels were categorized as follows: 50% of students were in the below average category, 30% in the average category and 20% in the above average category. Overall, the study revealed a low level of awareness about PCOS among all students, highlighting the need for an awareness program to enhance their knowledge of the condition.[26]

A university students' perspective study on awareness of Polycystic Ovary Syndrome. It aimed to evaluate the knowledge and attitudes of university students toward Polycystic Ovary Syndrome (PCOS) at two universities in Northern Jordan. This cross sectional study employed an online survey targeting female students from two Northern Jordanian universities. Key outcome measures included the average PCOS awareness score, predictors of high awareness and primary sources of information. Out of 1,182 respondents,

29.9% reported receiving a formal PCOS diagnosis. The average PCOS awareness score was M = 11.59 (SD = 4.95).[27]

Knowledge, perception and attitude of PCOD

A study conducted in Mangalore (India) on knowledge regarding PCOS to find out effect of structured teaching programme with pretest and post test. The sample was 35 students. The pretest 54.2% had poor knowledge, 40% had average knowledge. In the post test 71.4% had average and 17.2% had poor knowledge.[28]

A study was conducted in Kerala on knowledge regarding PCOS in unmarried PCOS patients. A total 15 participants with PCOS were selected by telephonic interviews were conducted in late November and early December 2020. It revealed that few respondents that they lacked the necessary awareness of PCOS when diagnosed at a younger age[29]

A descriptive survey research was conducted to evaluate the knowledge of nursing students about PCOS. Data were collected using a structured questionnaire from 150 nursing students at Nitte Usha Institute of Nursing Sciences in Mangalore, India. The collected data were analyzed using descriptive and inferential statistics. The demographic distribution of the participants revealed that: 85% were aged between 21 and 25 years, 75% identified as Christians, 82% followed a mixed diet and 92% reported having a regular menstrual cycle. Regarding knowledge levels, 76% of the participants demonstrated average knowledge, while 10.7% exhibited good knowledge about PCOS.[30]

An Exploratory Study to Evaluate the Knowledge of Polycystic Ovarian Syndrome Among Adolescent Girls in Selected Junior Colleges of Pune City. It included 100 teenage girls from junior colleges was selected using a non-probability purposive sampling technique. Data were collected by using a structured questionnaire. The study found that most adolescent girls (86%) had poor knowledge about PCOS, while 14% had average knowledge. The majority of participants (51%) were 17 years old, 39% belonged to nuclear families and 47% were second born. Normal menstrual flow was reported by 57% of the girls and 66% reported having a regular menstrual cycle. Regarding parental education, 33% of the fathers had no formal education, while 53% of the mothers had completed primary education. Additionally, 54% of the girls had prior knowledge about PCOS, with teachers being the primary source of information for 31% of them. There is no significant association found between knowledge about PCOS and demographic variables such as age, family type, birth order, menstrual flow and parental education.[31]

A study on knowledge, attitude and perception of Polycystic Ovary Syndrome (PCOS) among young students in higher educational institutions, PERAK, showed that 124 (56.6%) out of 219 respondents, stated that they are not familiar with the term of Polycystic Ovary Syndrome.186 (84.9%) out of 219 respondents answers yes for the basic knowledge in science regarding male hormone. 58 (72.1%) respondents know that the vaginal ultrasound and blood test can be the diagnostic parameter. Regarding insulin resistance among 219 respondents, 89 (40.6%) respondents pick the yes answer, and 130 (59.6%) respondents choose the no answer. Regarding awareness respondents ,there was answers negative to all clinical parameters while 83 (37.9%), 112 (51.1%), 91 (41.6%), 39 (17.8%), 35 (16.0%), 39 (17.8%), 127
(28.2%), 19 (18.7%) have periods that is very heavy (>2 pads per day), periods that more than seven days, absence of periods completely or partial absence of periods (1 month), chronic acne problem during period, hirsutism which is excessive amount of body hair that is normally minimal or absent (upper lip, chin, abdomen, breast, thighs etc.), abnormal weight gain that is continuously happen and family histories diagnosed with PCOS respectively. 19 (8.7%) respondents may have a chance to develop PCOS as their families have the histories diagnose with PCOS. Regarding perception of PCOD 18 (8.2%) of respondents agrees that PCOS is not a big health issue and not serious problem while 151 (68.9%) does not agree as from their perspective, PCOS is a big and serious health issue as it is can lead to infertility and can be inherited. 50 (22.8%) respondents still unsure with this question.[32]

Prevalence and attitude of PCOD

A cross sectional study on Assessment of Knowledge and Prevalence of PCOS risk factors among Undergraduate Women. It was conducted across four selected degree colleges in Kalaburagi as a 6-month community-based study. Participants were enrolled based on specific study criteria, and data collection included a PCOS knowledge assessment questionnaire to evaluate participant awareness. The results showed that 275 female students aged 18 to 25 years. The knowledge scores improved significantly, with pretest scores averaging 42.16% and post test scores rising to 80.76%. Self assessment of PCOS risk factors showed that 171 participants (62.2%) were unlikely to have PCOS, while 11 participants (4.0%) were identified as being at high risk. A statistically significant difference in knowledge scores was observed based on faculty of study and dietary habits.[33]

A study on Awareness and Knowledge of Polycystic Ovarian Syndrome among University Students in Narayangonj. PCOS is a common endocrine disorder affecting women of reproductive age, characterized by hormonal imbalances that can cause menstrual irregularities and fertility challenges. Findings revealed that 62.75% of participants were unaware of PCOS, though 50.5% believed it is a manageable condition. Among 400 students, only 4.75% had been diagnosed with PCOS, of these, 21.05% had a family history of the disorder and 94.73% received information regarding PCOS from healthcare professionals. Regarding symptom awareness, 67.25% recognized irregular periods as a common sign, while 60.25% identified infertility as a significant complication. Additionally, 36.75% believed exercise could help prevent PCOS, with 54.42% of those associating exercise with weight management. Notably, 71.5% of students acknowledged that PCOS could be treated with medication.[34]

A retrospective study on Prevalence of PCOD in Patients Visiting OPD of Karuna Medical College. Case records of women diagnosed with Polycystic Ovarian Disease (PCOD) who attended the gynecology outpatient department at Karuna Medical College Hospital, Kerala. The sample was 120 women aged 14–30 years, selected randomly. Data collection spanned 12 months, utilizing available hospital records. Diagnosis was established based on Rotterdam's criteria. Among the participants, 75 women were unmarried, and 45 were married. Subclinical hyperandrogenism was identified in 2 women, while increased dehydroepiandrosterone (DHEA) levels were noted in 70 women. An FSH ratio greater than 2:1 was seen in 84 women. Testosterone levels were within normal limits for all participants. Elevated Anti-Mullerian Hormone (AMH) levels, indicative of hyperandrogenism, were found in 84 women. Serum prolactin levels were normal in the majority, except in 2 cases.[35]

A cross sectional survey study on Assessment of prevalence, knowledge of Polycystic Ovarian Syndrome and health related practices among women in Klang valley, Malaysia, using a self administered online questionnaire. The results revealed that out of 410 women participated in the survey, 43 (10.49%) had a medically diagnosed PCOS, 11 (2.68%) were diagnosed based on symptoms and 135 (32.93%) were suspected to have PCOS. Almost half of the respondents demonstrated poor knowledge (47.30%) and poor health practices (47.60%) concerning PCOS. Additionally, 46 (11.22%) reported abnormal scalp hair loss, while 30 (7.32%) had diabetes.[36]

Assessment of risk factors of PCOD

An observational study on Assessment of Risk Factors, Prevalence, Knowledge, Attitude and Practices related to Polycystic Ovarian Syndrome in a Community. It was conducted over five months in the communities of Mysore, Hassan, and Mandya. Females aged 12–55 years who were willing to participate and capable of understanding and answering the questionnaire were included. The KAP questionnaire included 11 knowledge, 8 attitude, and 7 practice items, administered to 106 participants. Data for evaluating KAP on PCOS were collected using appropriate forms and scores were analyzed using statistical tools. The results revealed that the majority had poor knowledge (66%), poor attitude (84.9%) and poor practices (90.56%). Overall, 82.07% of participants exhibited poor KAP scores related to PCOS. Risk factor analysis showed statistically there is significant association between overall KAP scores and factors such as weight, medical and medication history, smoking, menstrual regularity, pain severity, fertility problems, contraceptive use, presence of PCOS, family history and current medication. Additionally, risk factor analysis specific to PCOS revealed statistically significant association with weight and the age of menarche.[37]

A Study conducted on identification of risk factors in developing Polycystic Ovarian Disease among teenagers and minimizing them by Life Style Modifications through Advanced Patient Counselling by Doctor of Pharmacy Annamacharya college of Pharmacy, Kadapa, Andhra Pradesh, India. The study revealed, out of 600 women, 530 enrolled to participate. After gathering information using PCOD self-assessment forms, the scoring revealed that 271 participants scored > 5, indicating a percentile of 51.1320, suggesting a chance of developing PCOD. Additionally, 159 participants scored > 10, with a percentile of 30.01, indicating a high likelihood of developing PCOD. On the other hand, 100 participants scored < 5, with a percentile of 18.8679, suggesting unpredictability regarding PCOD. It highlights that PCOD occurrence is more prevalent among teenage females, posing a significant obstacle to their overall health and potentially leading to infertility. The major risk factors identified include dietary changes, stress and an imbalanced and unhealthy lifestyle among females. The study underscores the importance of proactive intervention by healthcare professionals, particularly pharmacists, in addressing and minimizing these risk factors through tailored patient counselling and lifestyle adjustment

CHAPTER-2

METHODOLOGY, RESULTS, DISCUSSION

Research Methodology

The research methodology indicates the pattern generally used for organizing the procedure and helps in gathering valid and reliable data for an investigation. It involves the steps, procedures and strategies for gathering and analyzing data.

The present study aims to assess the awareness regarding PCOD and its risk assessment among college students. This chapter includes research approach, research design, variables, schematic representation of the study, setting, population, sample, sampling technique, tools and technique, pilot study, data collection process and plan for data analysis.

Research approach

Research approach is a framework used for guiding the study. The approach used in this research involves the description of the plan to investigate the phenomenon under study. In this study quantitative non experimental approach is used. Research approach helps the researcher to determine what data to collect and how to analyse it.

A quantitative non-experimental approach was considered to be most appropriate and was adopted in order to assess the awareness regarding PCOD and its Risk Assessment among college students.

Research design

The research design adopted for the present study is non-experimental descriptive design. This design serves as a master plan, outlining the methods and procedures for collecting and analyzing data to achieve the study objectives. It provides a blueprint for investigating the awareness regarding PCOD and its risk assessment among college students, enabling the researcher to describe and summarize the characteristics of the study population.

The Descriptive Survey Design is the approach suitable for this study, as it facilitates the collection of data through a structured questionnaire, providing valuable insights into the phenomenon under investigation.

Variables Under Study

Research variables

- Awareness regarding PCOD
- Risk assessment of PCOD

Socio personal variables

- Age, year of study, type of stay, type of food, presence of PCOD, source of information regarding PCOD

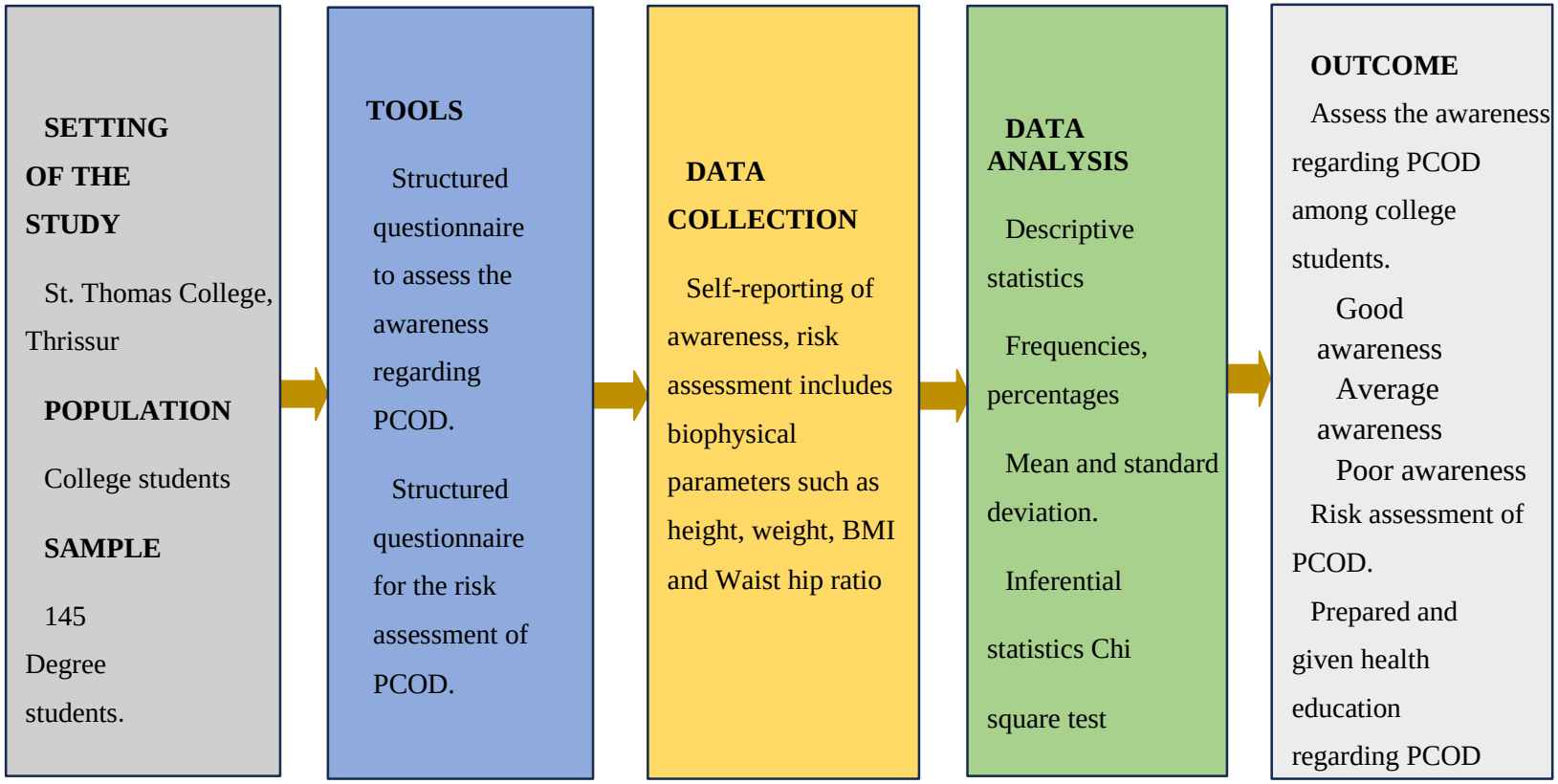

Figure 2: Schematic representation of the study

Setting of the Study

The present study was conducted at St. Thomas College, Thrissur which served as the physical location for data collection.

Population

The population comprised of degree college students of St. Thomas college, Thrissur

Sampling criteria Inclusion criteria

1) 1st and 2nd year degree students
2) Students who are willing to participate

Exclusion criteria

1) Students who are medical professionals.

Sample

A sample of 145 college students at St. Thomas college, Thrissur, who fulfill the inclusion criteria present during the data collection time will be selected as samples. This sample represented the larger population of college students in Thrissur district.

Sampling technique

Sampling technique used for this study is stratified random sampling.

The study employed stratified random sampling technique. St Thomas college was selected for the study in Thrissur district. Subsequently 145 samples were selected based on predetermined inclusion and exclusion criteria. This sampling approach ensured that the selected sample was representative of the population under study.

Sample size for the awareness regarding PCOD and its risk assessment among college students. The sample size estimation is done based on this study. Awareness of Polycystic Ovarian Disease among young women of central India.

Sample size is calculated based using the formula.

The equation to calculate

sample size - n = $4pq/d^2$

p is the proportion of awareness regarding PCOS.

p	=	41%
d^2	=	20% of p
q	=	100-41= 59
d	=	0.20 x 41=8.2
	=	8.2x8.2 = 67.24
4x41x59/67.24	=	143.9=145

Tools and technique

Data was collected by using following tools.

Tool 1: Socio personal data sheet.

Tool 2: Structured questionnaire to assess the awareness regarding PCOD.

Tool3: Structured questionnaire for risk assessment

Technique: questionnaire method

Development of the tool

The investigator developed the tool 1, 2 and 3 based on the objectives of the study. The following methods were selected for the development of tool.

- Review of relevant literatures are taken from textbooks, journals, periodicals and websites.
- Formal discussion with experts of obstetrics and gynaecological nursing and statistics were

taken.

- Suggestions for language were taken from experts.
- Valuable suggestions and guidance from the guide were taken.
- Informal discussions with college students.
- Professional experience of the investigator also helped to detect the important areas to be included in the tool.
- Items of the tools were collected, scrutinized, selected and checked for any overlapping.
- Blueprint of the tool was developed and questionnaire was constructed.
- Cross checking was done and modifications were made based on the consultation and suggestions of the expert and research guide.
- The initial draft of the tool was prepared by the researcher and send to 10 experts for content validity.
- Content validity index was calculated and final draft of the tools were prepared.

Description of the tool

Tool 1- Socio personal data sheet: The socio personal data sheet is a questionnaire designed to collect fundamental information about participants, such as their age, year of study, type of stay, type of diet, previous information regarding PCOD, information source of PCOD and presence of PCOD. By using a structured questionnaire technique, researchers can gather detailed and accurate responses, ensuring that each aspect of the participant's background is understood and documented. This tool is essential for studies that require insight into participants' personal and social contexts, as it provides a well-rounded profile that aids in interpreting data within the framework of their unique characteristics and life circumstances.

Tool 2-Awareness questionnaire regarding PCOD

This questionnaire is designed by the investigator. It contains 15 questions related to definition, risk factors, signs and symptoms, investigation and management of PCOD. For each correct answer 1mark and 0 for wrong answers.

The total score ranges from 0-15. The total score was arbitrarily categorized into three:

- Good -11-15
- Average - 6-10
- Poor - 0 - 5

Tool 3: Questionnaire regarding Risk assessment of PCOD

This questionnaire is also developed by the investigator. It contains 7 questions related to family history of diabetes mellitus, family history of PCOD and their relation, consumption of junk foods, regular exercise, any hormonal treatments or medications, stress producing factors and biophysical measures such as weight, height, waist hip ratio and BMI. For each positive answer 1mark and 0 for negative answers.

The total score ranges from 0-9. The total score was arbitrarily categorized into three:

- High risk 7-9
- Moderate risk 4-6
- Low risk 0-3

Content validity of the tool

To establish the accuracy and relevancy of the tool, content validity was done by experts. Five experts from the fields of Obstetrics and Gynaecological Nursing, who evaluated its relevance, adequacy, and appropriateness for measuring awareness regarding PCOD and its risk assessment among college students. The content validity index (CVI) scores were 1 for socio-demographic data, 1 for awareness questionnaire, and 1 for the risk assessment questionnaire. Following expert feedback, modifications were made, questions added, thereby ensuring the tool's validity and reliability for measuring.

Reliability of the tool

The reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to measure. Reliability of the tools was tested using Cronbach's alpha method. The reliability co-efficient of tool I was found to be 0.794, tool Il was 0.73 which showed that the tool is reliable."

Pilot study

The study was conducted after getting approval from Scientific review committee, Institutional Ethics committee, and administrative sanction from Sree Paramekavu College, Thrissur. The pilot study was conducted on 10% of samples College students from Sree Paramekavu College, Thrissur were selected. After getting informed consent, the students who fulfil the selection criteria, was selected. The data was collected on 14/11/24. Sample size was determined as 145 samples, for pilot study15 students was selected. Investigator explained about the study purpose and ensured privacy and confidentiality. After obtaining the consent from the participants the tools were administered.

Pilot study revealed the comprehensibility of the tool and practical difficulties regarding some of the items in the questionnaire. After pilot study presentation some questions were included in the socio demographic data sheet and risk assessment based on the suggestions from experts and guide. The collected data was found amenable to statistical analysis. The data collected was statistically analyzed using descriptive and inferential statistics.

Data collection process

- The investigator obtained permission from the Scientific Review Committee, Institutional Ethics Committee of Govt. College of Nursing, Thrissur and authorities of St. Thomas College, Thrissur for conducting the study.
- The investigator collected the list of students from college.
- After collecting the list of students from college, they are classified according to the inclusion criteria.
- Then stratified sampling was used to select the students from that list.
- The data was collected from 23/12/24 – 23/1/2025.
- The investigator introduced herself and explained the purpose of the study.
- The study was conducted among 145 students.
- After obtaining informed consent, the socio personal data of the students was obtained.
- Awareness regarding PCOD was assessed by structured questionnaire.
- Risk assessment was assessed by structured questionnaire and weight, height, BMI and waist hip ratio was taken by the investigator.
- The information was kept confidential and will be used only for the study purpose. The questionnaire was distributed to the students without disturbing their class schedules.

Plan for data analysis

- The data collected will be compiled, organized and analysed using statistical package for social science software (SPSS).
- Descriptive and inferential statistics will be applied.
- Awareness regarding PCOD will be analyzed in terms of frequency and percentage.
- Risk assessment of PCOD will be analyzed in terms of frequency and percentage.
- Association between awareness regarding PCOD and their socio personal variables of college students will be analyzed using chi-square test.

Section wise data analysis and interpretation

The analysis and interpretation of the study is dealt in this section. Analysis is the process of organizing and synthesizing data in such a way that the research question can be answered and the hypothesis can be tested. The purpose of the analysis is to summarize, compare and test the proposed relationship and conclude the findings.

The present study was intended to assess the awareness regarding PCOD and its risk assessment. The samples were selected based on the inclusion criteria. The data was collected from 145 students using socio personal data sheet and structured questionnaire of awareness and risk assessment. The collected data was organized, tabulated and analysed using descriptive and inferential statistics. The findings of the study were organized under the following headings.

Section I **:** Socio-personal data of students.
Section II **:** Awareness regarding PCOD among college students.
Section III **:** Risk assessment of PCOD among college students.
Section IV **:** Association between awareness regarding PCOD and selected socio personal characteristics of college students

Section I: Socio-personal data

This section deals with the description of socio personal data of students. This includes age, year of study, type of stay, type of diet, previous information regarding PCOD, source of information of PCOD and presence of PCOD. It is presented from table 1- 8

Table 1

Frequency distribution and percentage of college students based on age

n=145

Age in years	f	%	Mean	SD
18	30	20.69	19.24	0.81
19	54	37.24		
20	57	39.31		
21	04	02.76		

Table1 shows that 39.31% of college students belonged to the age of 20 years. The mean age of college students was 19.24 ± 0.81.

Table 2

Frequency distribution and percentage of college students based on year of study

n=145

Year of study	f	%
1st year	68	46.90
2nd year	77	53.10

Table 2 shows that 53.1% of college students were studying in 2nd year of degree.

Table 3

Frequency distribution and percentage of college students based on type of stay

n=145

Type of stay	f	%
Hostel	31	21.38
Home	114	78.62

Table 3 shows that 78.62 %of college students were staying in home.

Table 4

Frequency distribution and percentage of college students based on food pattern

n=145

Food pattern	f	%
Vegetarian	05	3.45
Mixed	140	96.55

Table 4 shows that 96.55% of college students were consuming mixed type of diet.

Table 5

Frequency distribution and percentage of college students based on their previous information about PCOD

n=145

Previous information about PCOD	f	%
Yes	96	66.21
No	49	33.79

Table 5 shows that 66.2 % college students had previous knowledge regarding PCOD

Table 6

Frequency distribution and percentage of college students based on source of information regarding PCOD

n=96

Source of information	f	%
Health personnel	20	13.79
Friends	30	20.69
Parents	16	11.04
Mass Media	30	20.69

Table 6 shows that 20.69% of college students had mass media and friends as source of information regarding PCOD.

Table 7

Frequency distribution and percentage of college students based on presence of PCOD

n=145

Presence of PCOD	f	%
Yes	15	10.34
No	130	89.66

Table 7 shows that 10.34 % of college students had PCOD.

Table 8

Frequency distribution and percentage of college students affected with PCOD based on its duration and management

n=15

Details	f	%
Duration of PCOD (yrs)		
5	02	13.33
4	04	26.67
3	05	33.34
2	02	13.33
1	02	13.33
Taking medicines for PCOD	06	40.00
Yes		
No	09	60.00

Table 8 shows that 33.34% of students had PCOD since 3 year, 60% of students were not taking medicines and all students had followed lifestyle modification.

Section II: **Awareness regarding PCOD among college students.**

This section deals with the questions related to definition, risk factors, clinical manifestations, lifestyle modifications and management. It is presented from table 9- 10

The total score ranges from 0-15. The total score was arbitrarily categorized into three:

- Good -11-15
- Average -6-10
- Poor -0- 5

Table 9

Frequency distribution and percentage of college students based on overall awareness regarding PCOD

n=145

Awareness	f	%	Mean	SD
Good	09	06.20		
Average	97	66.90	7.02	2.16
Poor	39	26.90		

Table 9 shows that 66.9% of students had average awareness regarding PCOD. The mean awareness was 7.02 ± 2.16.

Table 10

Frequency distribution and percentage of college students based on awareness regarding risk factors, signs and symptoms and management of PCOD

n=145

Awareness	Correct response		Incorrect response	
	f	%	f	%
Risk factors	95	65.52	50	34.48
Signs and symptoms	70	48.28	75	51.72
Management	75	51.72	70	48.28

Table 10 shows that 65.52% and 51.72% had correct response for risk factors and management of PCOD, whereas only less than half (48.28%) participants had correct response regarding signs and symptoms of PCOD.

Section III: **Risk assessment regarding PCOD among college students**

This section deals with the questions related family history of diabetes, PCOD, regular exercise, consuming junk foods, stress factors, taking other drugs. This is presented from table 11-15.

The total score ranges from 0-9. The total score was arbitrarily categorized into three:

- High risk -7-9
- Moderate risk- 4-6
- Low risk - 0-3

Table 11

Frequency distribution and percentage of college students based on risk assessment of PCOD

n=145

Risk assessment of PCOD	f	%	Mean	SD
High Risk	01	0.70		
Moderate Risk	106	73.10	6.05	1.06
Low Risk	38	26.20		

Table 11 shows that 73.1% of students had moderate risk for PCOD. The mean risk was 6.05 ± 1.06.

Table 12

Frequency distribution and percentage of college students based on their family history of diabetes mellitus and PCOD

n=145

Risk Assessment	f	%
Family history of DM		
Yes	35	24.14
No	110	75.86
Family history of PCOD		
Yes	13	8.96
No	132	91.04

Table 12 shows that 75.86% of students had family history of DM and 8.96% had family history of PCOD.

Table13

Frequency distribution and percentage of college students based on consuming junk foods and regular exercise

n=145

Habits	f	%
Consuming Junk foods		
Yes	122	84.14
No	23	15.86
Regular exercise		
Yes	18	12.41
No	127	87.59

Table 13 shows that 84.14% of students were consuming junk foods and 87.59% of students are not on regular exercise.

Students reported that no one was taking hormonal treatment and other medications for any other diseases.

Table 14

Frequency distribution and percentage of college students based on having stress factors

n=145

Stress factors	f	%
Studies	46	31.72
Exams	52	35.87
Family issues	2	2.07
No factors	44	30.34

Table 14 shows that 35.87% had exams as stress factor.

Table 15

Frequency distribution and percentage of college students based on their BMI and Waist hip ratio (WHO)

n=145

Physical parameters	f	%
BMI		
<18.5(underweight)	25	17.24
18.5 – 24.9 (normal)	56	38.62
25-29.9(overweight)	63	43.44
>30(obese)	01	00.70
Waist hip ratio <0.80 (low risk)	52	35.86
0.80-0.84(moderate risk)	64	44.14
>0.85 (high risk)	29	20.00

Table 15 shows that 43.44 % of students had overweight and 44.14% of students had waist hip ratio at a moderate risk.

Section IV: Association between awareness regarding PCOD and selected socio personal variables of college students

This section attempts to study the association between awareness regrading PCOD and selected socio personal variables of college students such as age, year of study, type of stay, previous information of PCOD, source of information and presence of PCOD. It is presented in the table 16-20. To find out the association, the following null hypothesis is stated.

H_0- There is no significant association between awareness regrading Polycystic Ovarian Disease and selected socio personal variables among college students. The hypothesis is tested by Chi square.

Table 16

Association between awareness regarding PCOD and year of study college students

n= 145

Year of study	Awareness regarding PCOD		df	χ^2	P value
	> $\bar{x}$	≤ $\bar{x}$			
1st year	32	36	1	4.53	0.033*
2nd year	23	54			

** Significant at 0.05 level*

Table 16 shows that the calculated chi square value for the association between awareness regarding PCOD and year of college students was 4.53 and the p value obtained was 0.033. As the p value obtained was less than 0.05, hence null hypothesis was rejected and it was interpreted that there is significant association between awareness regarding PCOD and year of study of college students.

Table 17

Association between awareness regarding PCOD and type of stay of college students

n= 145

Type of stay	Awareness regarding PCOD		df	χ^2	P value
	> $\bar{x}$	≤ $\bar{x}$			
Hostel	11	20	1	0.100	0.751ns
Home	44	70			

ns non-significant

Table 17 shows that the calculated chi square value for the association between awareness regarding PCOD and type of stay of college students was 0.100 and the p value obtained was 0.751. As the p value obtained was greater than 0.05, hence null hypothesis was accepted and it was interpreted that there was no significant association between awareness regarding PCOD and type of stay of college students.

Table 18

Association between awareness regarding PCOD and previous information about PCOD of college students

n= 145

Previous information about PCOD	Awareness regarding PCOD		df	χ^2	P value
	> $\bar{x}$	≤ $\bar{x}$			
Yes	39	57	1	0.876	0.349^{ns}
No	16	33			

ns non-significant

Table 18 shows that the calculated chi square value for the association between awareness regarding PCOD and previous information about PCOD of college students was 0.876 and the p value obtained was 0.349. As the p value obtained was greater than 0.05, hence null hypothesis was accepted and it was interpreted that there was no significant association between awareness regarding PCOD and previous information about PCOD among college students.

Table 19

Association between awareness regarding PCOD and source of information about PCOD of college students

n= 145

Source of information	Awareness regarding PCOD		df	χ^2	P value
	> $\bar{x}$	≤ $\bar{x}$			
Health personnel	10	10			
Friends	8	22			
Parents	6	10	4	5.291	0.259^{ns}
Mass Media	15	15			
No	16	33			

ns non-significant

Table 19 shows that the calculated Chi square value for the association between awareness regarding PCOD and source of information about PCOD of college students was 5.291 and the p value obtained was 0.259. As the p value obtained was greater than 0.05, hence null hypothesis was accepted and it was interpreted that there was no significant association between awareness regarding PCOD and source of information among college students.

Table 20

Association between awareness regarding PCOD and presence of PCOD among college students

n=145

Presence of PCOD	Awareness regarding PCOD		df	χ^2	P value
	>$\bar{x}$	≤ $\bar{x}$			
Yes	06	9	1	0.030	0.862^{ns}
No	49	81			

ns non-significant

Table 20 shows that the calculated Chi square value for the association between awareness regarding PCOD and presence of PCOD among college students was 0.030 and the p value obtained was 0.862. As the p value obtained was greater than 0.05, hence null hypothesis was accepted and it was interpreted that there was no significant association between awareness regarding PCOD and presence of PCOD among college students.

Results

This section deals with the findings of the study to identify awareness and risk assessment of Polycystic Ovarian Disease among college students, Thrissur.

The objectives of the study were:

1. Assess the awareness regarding PCOD among college students.
2. Assess the risk of PCOD among college students.
3. Find the association between awareness of PCOD and selected socio personal variables of college students

The hypothesis of the study was:

Tested at 0.05 level of significance

H_1- There is a significant association between awareness of Polycystic Ovarian Disease and selected socio personal variables among college students.

Major findings of the study

The results of the study were organized under 4 sections

Section :1

Socio personal profile of college students

- Out of the 145 college students, 39.31% of college students belonged to the age of 20 years.
- Most of the students, that is 53.1% of college students belonged to 2nd year.
- Most of the college students, 78.62% was staying in home.
- Most of the college students, 96.55%was consuming mixed type of food.
- Among 145 college students, 66.21% college students had previous knowledge regarding PCOD.
- Most of the college students, 20.69% had friends and mass media as source of information regarding PCOD.
- Among college students 10.34% had PCOD.
- Among 145 college students, 33.34% of students had PCOD since 3 year, 60% of students were not taking medicines and all students had done lifestyle modification .

Section: 2

Awareness regarding PCOD among college students

- Among 145 college students 66.9% of had average awareness regarding PCOD.
- More than half 65.52% of students made correct response regarding risk factors and 51.72% made correct response about management of PCOD.
- Among 145 students 51.72% of students made incorrect response about signs and symptoms of PCOD
- Out of 145 students 48.28% of students made incorrect response about management of PCOD.

Section :3

Risk assessment regarding PCOD among college students

- Out of 145 college students 73.1% of students had moderate risk for PCOD.
- Majority of the college students 75.86% had family history of DM and 8.96% had family history of PCOD.
- Majority of the college students 84.14% was consuming junk foods and 87.59% of students was not on regular exercise.
- All the students were not taking hormonal treatment and not using other medications.
- Most of the college students 35.87% had exams as stress producing factors.
- Out of 145 students 43.44% of students had overweight and 44.14% had moderate risk of waist hip ratio.

Section 4: Association between awareness of PCOD and selected socio personal variables of college students

There was no significant association between awareness regarding PCOD and type of stay (χ^2= 0.100, p= 0.751).

There was no significant association between awareness regarding PCOD and previous information of PCOD (χ^2=0.876, p=0.349).

There was no significant association between awareness regarding PCOD and source of information of PCOD (χ^2=5.291, p=0.259)

There was no significant association between awareness regarding PCOD and presence of PCOD (χ^2= 0.030, p=0,862).

Chi square value for the association between awareness regarding PCOD and year of college students was 4.53 and the p value obtained was 0.033. As the p value obtained was less than 0.05, hence null hypothesis was rejected and it was interpreted that there is significant association between awareness regarding PCOD and year of study of college students.

Discussion

This section deals with the discussion of the study. The study was undertaken and intended to assess the awareness regarding PCOD and its risk assessment. The findings of present study are discussed with the findings of other studies reviewed by the researcher.

The present study aimed to assess awareness and risk assessment of Polycystic Ovarian Disease (PCOD) among college students in Thrissur. The results revealed that while the majority of students had average awareness about PCOD, their awareness regarding its signs and symptoms, and management was suboptimal. Additionally, a significant proportion of students exhibited moderate risk factors for PCOD, including unhealthy dietary habits, lack of exercise and stress. The findings of this study align with and contrast various aspects of previous research conducted on PCOD awareness and risk factors.

The present study showed that (97.24%) had heard about PCOD from various sources whereas, similar study conducted at AIMS, Bilaspur, had only 43.4%, the present study showed that a much higher percentage of students had average awareness regarding the condition. This discrepancy may be attributed to the demographic differences in study populations, as college students are more likely to be exposed to health related discussions. However, despite the high level of awareness, 51.27% of students in the present study had poor awareness regarding the signs and symptoms of PCOD, which is consistent with the AIMS study's finding that 60.5% of women exhibited poor knowledge of the condition. Additionally, both studies indicated that lifestyle modifications, such as weight reduction and healthy eating, were recognized as crucial factors in PCOD management.[19]

Similarly, the present study reported that 10.34% of college students self reported a diagnosis of PCOD, it aligns with the survey study conducted at Emirati University found that 13% of participants self reported a diagnosis of PCOD. The Emirati study also highlighted a lack of reproductive health knowledge among students, particularly in relation to PCOD symptoms and management. This is consistent with the present study's findings, where a considerable percentage of students had poor awareness of PCOD related changes in the body (51.27%) and management strategies (48.2%). Additionally, both studies highlighted unhealthy lifestyle habits, such as frequent junk food consumption and low levels of physical activity, as major contributors to PCOD risk. In the present study, 84.14% of students consumed junk food and 87.59% did not engage in regular exercise, reinforcing the findings from the Emirati study regarding the role of lifestyle choices in PCOD prevalence.[20]

The findings of present study showed that 73.1% of college students had a moderate risk for PCOD, which closely aligns with the study conducted in Mysuru focused on assessing PCOS risk and the effectiveness of an awareness program. It reported that 56% of adolescent girls was at moderate risk for PCOD. Additionally, the Mysuru study demonstrated that an educational intervention significantly improved knowledge levels about PCOD and its management. This suggests that similar awareness programs may be beneficial for college students in Thrissur, addressing the identified gaps in knowledge regarding PCOD's symptoms and management.[23]

In the current study, 97.24% of students had previous knowledge regarding PCOD, whereas in the other study, only 41% of participants were aware of the term Polycystic Ovarian Syndrome (PCOS). This indicates that awareness levels were significantly higher among the college students in the present study. In the present study, 33.79% of students reported that they had no source of information about PCOD, other study supported that most individuals learned about PCOS through friends or relatives. This suggests that informal sources of information play a major role in spreading awareness about PCOS/PCOD. [39]

In the current study, the mean age of the college students was 19.24 ± 0.81 years, with 39.31% of participants belonging to the age group of 20 years. These findings shows that the majority of participants were in late adolescence or early adulthood, a critical age group for the manifestation of Polycystic Ovarian Syndrome (PCOS). In comparison, with a study reported a higher mean age of 22.74 ± 3.81 years, suggesting that their sample comprised slightly older women who may have already experienced more pronounced clinical symptoms of PCOS. With regard to clinical manifestations, the comparative study reported hirsutism (30.7%), overweight (66.9%), acne (21.7%), infertility (17.2%), amenorrhea (5.9%), oligomenorrhea (82.4%), and obesity (21.4%) as common manifestations among participants. While present study results showed that 43.44% had overweight and 44.14% had waist hip ration at moderate risk. The observed age difference could imply that early screening and awareness programs targeted at younger college students might help identify PCOS at a subclinical stage, potentially before more severe symptoms, such as infertility and amenorrhea fully develop.[40]

Furthermore, the present study found only significant association between awareness of PCOD and year of study. It had no association with other socio personal variables such as type of stay, prior information about PCOD, and presence of the condition. This contrasts with the findings from the AIMS study, where education level and occupation status were significantly associated with PCOD knowledge. The difference in results may be due to variations in study designs, sample sizes, and demographic factors.

Overall, the findings from the present study align with previous research in terms of identifying a gap in awareness regarding PCOD symptoms and management, as well as recognizing the role of lifestyle factors in PCOD risk. However, the high level of prior knowledge about PCOD among college students in this study suggests that while awareness exists, a deeper understanding of the condition needs to be emphasized. Implementing targeted educational interventions, promoting lifestyle modifications and enhancing reproductive health literacy among young women could help bridge these knowledge gaps and reduce PCOD risk in the college going population.

Summary

This chapter focused on the methodology, results, and discussion related to assessing awareness and risk of Polycystic Ovarian Disease (PCOD) among college students**.** The study followed a quantitative non-experimental descriptive survey design and was conducted at St. Thomas College, Thrissur. A stratified random sampling technique was used to select a sample of 145-degree students from the first and second years. The study utilized three main tools: a socio-personal data sheet, a structured questionnaire to assess awareness of PCOD, and another to assess risk factors related to the disease. The tools were validated through expert opinion and showed strong reliability (Cronbach's alpha > 0.73).

The findings revealed that the majority of students (39.31%) were 20 years old, with a mean age of 19.24 years. Most (53.1%) were second-year students, and the majority (78.62%) lived at home. A significant number (96.55%) consumed mixed diets, and 66.2% had previous knowledge of PCOD, although 33.79% had no clear source of information. About 10.34% of the students reported having PCOD, mostly diagnosed three years prior. Interestingly, 60% of those diagnosed were not on medication but had all adopted lifestyle modifications.

Awareness assessment showed that most students (66.9%) had average awareness of PCOD, while 26.9% had poor awareness and only 6.2% had good awareness. Regarding specific domains, 65.52% correctly identified risk factors, 48.28% recognized signs and symptoms, and 51.72% were aware of management options. In terms of risk, the majority (73.1%) of students fell under the moderate-risk category, with only 0.7% at high risk. Family history of diabetes was present in 24.14%, and 8.96% had a family history of PCOD. A large number of students (84.14%) consumed junk food, and 87.59% did not engage in regular exercise. BMI data showed that 43.44% of students were overweight, and 44.14% had a moderate risk.

Stress factors were predominantly academic, with exams being the leading source of stress for 35.87% of students. Statistical analysis using the chi-square test showed a significant association between year of study and awareness levels ($p = 0.033$), but no significant relationship was found between awareness and variables such as type of stay, presence of PCOD, prior knowledge, or source of information.

In conclusion, this Chapter demonstrates that while students generally had moderate awareness of PCOD, many exhibited lifestyles risk factors that could predispose them to the disease. The findings underscore the importance of targeted educational interventions and health promotion activities in college settings to improve awareness and reduce risk.

CHAPTER-3

LIMITATIONS, SCOPE FOR FUTURE STUDIES

This chapter deals with limitation and scope for future study. This severs as an idea for future researchers.

Limitations:

- The study results are limited to a small sample size.
- Awareness levels were assessed based on self reported responses by students, which may include biases.
- As the study was conducted in a specific college there is limitation for generalizability of the results.

Scope for future studies:

- The replication of this study can be done in different populations for better understanding.
- A larger sample size should be used for more reliable results.
- The future studies can assess effectiveness of structured awareness programs on PCOD.
- Interventional studies can be done with PCOD.
- Research can be done to evaluate the impact of lifestyle modifications on PCOD risk.
- Family and Community-Based Studies can be extended to include awareness and preventive practices within families and communities to promote early detection and support systems.
- Studies involving male students can be evaluated regarding awareness and perception of female reproductive health issues like PCOD, encouraging broader public health awareness
- Assess the effectiveness of social media and mobile apps in spreading PCOD related knowledge among adolescent and young adult women.
- Carry out long-term studies to track changes in awareness, risk factors, and the effectiveness of lifestyle interventions over time.
- Explore cultural norms, stigma, and socioeconomic factors affecting knowledge, attitudes, and health-seeking behavior related to PCOD.

CHAPTER -4

CONCLUSION, POLICY IMPLICATIONS

This chapter deals with the conclusion and nursing implications of the study

Conclusion

The following conclusions was derived based on the findings of the study.

- College students had average awareness regarding PCOD and on assessment moderate risk for PCOD.
- There was significant association between awareness regarding PCOD and year of study only, it showed no association between selected socio personal variables such as type of stay, previous information of PCOD, its source and presence of PCOD.
- The study concluded that the early detection and lifestyle modification is needed among college students.

Policy implications

The finding of the study has several implications in the field of nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

Nurses serve as frontline healthcare providers. They plays an important role in health promotion and maintenance of health**.** Primary prevention such as health education should be more emphasized**.** Nurses can contribute for increasing awareness regarding PCOD by conducting health screenings, educating students on symptoms like irregular periods, acne, weight gain and excessive hair growth and encouraging early medical intervention. Nurses can encourage lifestyle interventions and can also give guidance such as diet modifications (balanced diets), physical activity (regular exercise) and stress management. They can also collaborate with gynecologists, endocrinologists and dietitians to provide holistic care, ensuring that students receive appropriate treatment and counseling. Education related to long term complications such as infertility, diabetes and cardiovascular diseases also be emphasized. They can also do screening and use risk assessment tools in primary healthcare settings. Also advocate for the importance of regular menstrual tracking and hormonal assessments. Risk assessment tools should be integrated into routine college health check-ups to ensure early detection and timely intervention.

Nursing Education

Nursing education plays a vital role in spreading awareness regarding PCOD (Polycystic Ovarian Disease) and associated risks. Nursing curriculum should incorporate detailed chapters on reproductive health, endocrine disorders and lifestyle modifications related to PCOD. Educational institutions should also conduct regular workshops, webinars and health talks to enhance nursing student's knowledge of PCOD, its pathophysiology, symptoms, long term complications and management strategies. Nursing educators should emphasize early identification of risk factors such as obesity, irregular menstrual cycles, insulin resistance and hormonal imbalances, allowing students to guide young women effectively. Simulation-based training and case studies should be integrated into learning programs to develop critical thinking and problem-solving skills for PCOD management. Furthermore, nurses should be trained to counsel college students regarding healthy lifestyle practices, including balanced nutrition, regular exercise and stress management which can help prevent and manage PCOD. These all ensure that nurses can guide patients effectively.

Nursing Administration

To improve awareness and accessibility of healthcare services for college students at risk of PCOD, nursing administration should develop policies and initiatives. To identify PCOD symptoms at an early-stage nursing administrators should implement structured screening programs in colleges and universities, ensuring that students undergo regular health assessments. Administrators should facilitate training programs for healthcare professionals on PCOD risk assessment and management, promoting standardized care protocols. Administrators can establish student-friendly health clinics within educational institutions with dedicated nurses for reproductive health counselling which improve healthcare access. For the widespread dissemination of information, ensure policies should be formulated to include PCOD awareness programs in campus health initiatives. Additionally, nursing administrators should also collaborate with public health agencies, NGOs and governmental bodies to advocate for community-wide awareness campaigns, research funding and policy changes that support women's reproductive health.

Nursing Research

Research is essential for expanding the understanding of PCOD and improving risk assessment strategies among college students. To develop evidence-based practice nursing research should focus on identifying the prevalence, risk factors and lifestyle correlations of PCOD in young women. Studies should explore the effectiveness of educational programs, lifestyle modifications and psychological support in PCOD prevention and management. Research can also examine the barriers of college

students facing in accessing PCOD-related healthcare and propose solutions to bridge these gaps. Moreover, nurses should engage in interdisciplinary research collaboration for PCOD management and explore innovative screening tools, digital health interventions, and personalized care models. Nursing students should be encouraged to participate in research projects related to reproductive health which will contribute to the development of better healthcare strategies and policies. The findings of the research should be disseminated through conferences, publications and policy briefs to influence clinical practices and public health initiatives for PCOD awareness.

CHAPTER- 5 SUMMARY

The present study was aimed to assess the assess the awareness regarding PCOD and its risk assessment among college students.

The objectives of the study were following:

1. Assess the awareness regarding PCOD among college students.
2. Assess the risk of PCOD among college students.
3. Find the association between awareness of PCOD and selected socio personal variables of college students.

Hypothesis of the study

Tested at 0.05 level of significance

H_1: There is a significant association between awareness regarding PCOD and selected variables

The conceptual framework used in this study was based on the concepts of Nola Pender's Health Promotion model. A non experimental descriptive design was adopted for conducting this study. The sample was 145 college students from selected colleges, Thrissur. The research variable in this study was awareness regrading PCOD and its risk assessment among college students.

The tool used for the study was socio personal data sheet, the questionnaire regarding awareness of PCOD and questionnaire of risk assessment. The tool was found feasible and reliable.

A pilot study was conducted among 15 students from Sree Paramekavu college, on 14.11.24 and found feasible. The main research study was conducted from 23.12.2025 to 30.01.2025. Investigator selected 145 samples based on inclusion criteria after getting informed consent. Data was collected using socio personal data sheet, the questionnaire to assess the awareness regarding PCOD and risk assessment questionnaire. The investigator approached the college students and established good rapport with them and explained the purpose of the study. After obtaining the consent, the socio personal data sheet was obtained and the questionnaire was administered and it took around 20 minutes for completing. After completion of the tool, biophysical parameters were taken.

The data collected were analysed and interpreted according to the objectives. Descriptive statistics like frequencies and percentage were used to analyse the socio personal variables, Chi square test was used to find association between awareness regarding PCOD and selected socio personal variables.

The major findings of the study were as follows:

The more than half of the (66.9%) of students had average awareness regarding PCOD. The mean awareness was 7.02 ± 2.16.

There was only significant association between awareness regarding PCOD and year of study. There was no association between awareness regarding PCOD and selected variables such as type of stay, presence of PCOD, its source, previous information about PCOD.

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ANNEXURE -A BLANK DATA SHEET
TOOL-1: SOCIO PERSONAL DATA SHEET

Sample	Age	YS	TS	TF	PK	Source	PPCOD	Hlng	med	mod
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

TOOL 2 -AWARENESS REGARDING PCOD

Sample	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															

TOOL 3 – RISK ASSESSMENT

10	9	8	7	6	5	4	3	2	1	Sample
										HDM
										RELT
										HPCOD
										RELTN
										JUNK
										FRE
										EX
										OFTEN
										TIME
										TYPE
										HRT
										REAS
										LONG
										STRESS
										CAU
										DRUG
										FOR
										DUR
										BMI
										WHR

ANNEXURE – B

Blank consent form INFORMED CONSENT

In signing this document, I am giving my consent to be a subject for the study conducted by Gopika. R.S, First year M.Sc. Nursing student, Govt. College of Nursing, Thrissur "Awareness regarding Polycystic Ovarian Disease and its Risk Assessment among College Students. "I have been informed that the personal data collected for the study will be kept confidential and no name or identification data will be published in the study report. I am vested with the full right to revoke my consent and terminate the participation at any point of time during the study. I also understand that it won't affect my academics. I also understand that being a participant, no financial burden, what so ever, dissolve on me. I shall understand that, Gopika.R.S can be contacted for my doubts, questions or clarifications about the study. I will honour all agreement.

Researcher's Signature: Gopika.R.S
Govt. College of Nursing, Thrissur.
Date:
Place:

Respondent's Signature:
Respondent's Name:
Respondent's Address:

ANNEXURE-C PARTICIPANT INFORMATION SHEET

Title: Awareness regarding Polycystic Ovarian Disease and its Risk Assessment among College Students. Principal Investigator: Gopika. R.S Under the guidance of Mrs. Smitha Varghese. You are invited to take part in a research study entitled "Awareness regarding Polycystic Ovarian Disease and its Risk Assessment among College Students". Your participation in the study might help to understand the awareness regarding Polycystic Ovarian Disease and its Risk Assessment. Your participation in this study is voluntary, and you can enquire about all details before giving your written consent to participate in the study. The purpose of this study is to comprehensively assess the awareness regarding Polycystic Ovarian Disease and its Risk Assessment. By investigating the awareness regarding Polycystic Ovarian Disease and its Risk, the study aims to help in early identification and preventive aspects of PCOD. The cost of the study is borne by the investigator. Since there are no additional expenses incurred by you, there will be no monetary reimbursement. The information in the study records will be kept confidential and data will be stored securely and will be made available only to persons conducting the study and to the regulatory authorities. This proposal has been reviewed and approved by Institutional Ethics Committee, Government College of Nursing. Thrissur which makes sure that research participants were subjected to no harm. You are free to approach the committee for clarification. If you have any queries at any time about the study or the procedures, you may contact the researcher.

ANNEXURE -D MASTER CHART
TOOL 1 – SOCIO PERSONAL DATA SHEET

Sample	Age	YS	TS	TF	PK	Source	PPCOD	Hlng	med	mod
1	20	2	2	2	0	0	1	5	1	1
2	18	2	2	2	0	0	1	4	0	1
3	19	2	1	2	0	0	1	4	1	1
4	19	2	2	2	0	0	1	3	0	1
5	19	2	2	2	0	0	1	2	0	1
6	19	2	2	2	0	0	1	1	1	1
7	19	2	2	2	0	0	1	1	1	1
8	19	2	2	2	0	0	1	2	0	1
9	19	2	2	2	0	0	0			
10	19	2	2	2	0	0	0			
11	20	2	2	2	1	1	0			
12	20	2	2	2	1	2	0			
13	19	2	2	2	1	2	0			
14	19	2	2	2	0	0	0			
15	18	1	2	2	1	4	0			
16	18	1	2	2	1	4	0			
17	18	1	2	2	0	0	0			
18	18	1	2	2	1	0	0			
19	19	1	2	2	1	4	0			
20	19	1	2	1	1	2	0			

21	18	1	2	2	1	1	0			
22	19	1	2	2	1	1	0			
23	18	1	2	2	1	2	0			
24	18	1	2	2	1	2	0			
25	18	1	2	2	0	4	0			
26	18	1	2	2	1	0	0			
27	18	1	2	2	1	4	0			
28	18	2	1	2	1	2	0			
29	18	1	1	2	1	1	0			
30	19	2	1	2	1	3	0			
31	19	2	1	2	1	3	0			
32	19	2	2	2	1	3	0			
33	19	2	1	2	0	3	0			
34	19	2	2	2	1	0	0			
35	19	2	2	2	0	0	0			
36	19	2	2	2	1	1	0			
37	19	2	2	2	0	0	0			
38	19	2	2	2	1	1	0			
39	19	2	2	2	0	0	0			
40	21	2	1	2	1	1	0			
41	20	2	1	2	1	2	0			
42	19	2	1	1	1	1	0			
43	20	2	2	2	1	2	0			
44	19	2	1	2	1	2	0			
45	19	2	1	2	1	1	0			

46	19	2	1	2	1	4	0			
47	19	2	2	2	0	0	0			
48	18	2	2	2	0	0	0			
49	18	1	2	2	0	2	0			
50	19	1	2	2	0	0	0			
51	18	1	2	2	0	0	0			
52	19	1	2	2	0	0	0			
53	18	1	2	2	0	0	0			
54	18	1	2	2	1	4	0			
55	18	1	2	2	1	2	0			
56	18	1	1	2	1	2	0			
57	18	1	2	2	0	2	0			
58	18	1	2	2	0	0	0			
59	18	1	2	2	0	0	0			
60	18	1	2	2	0	0	0			
61	19	1	1	2	1	1	0			
62	18	1	2	2	0	0	0			
63	19	1	2	2	1	2	0			
64	18	1	2	2	0	0	0			
65	18	1	1	2	1	1	0			
66	20	1	2	2	0	0	0			
67	20	2	2	1	1	3	0			
68	20	2	2	1	1	4	0			
69	20	2	2	1	1	3	0			
70	20	2	1	2	1	2	0			

71	20	2	2	2	1	1	0			
72	20	2	2	2	1	4	0			
73	20	2	2	2	0	0	0			
74	20	2	1	2	1	3	0			
75	20	2	1	2	1	4	0			
76	20	2	2	2	1	4	0			
77	20	2	2	2	1	2	0			
78	20	2	2	2	1	4	0			
79	21	2	2	2	1	3	0			
80	20	2	2	2	1	2	0			
81	20	2	2	2	1	2	0			
82	20	2	2	2	1	2	0			
83	20	2	2	2	1	4	0			
84	20	2	2	2	1	4	0			
85	20	2	2	2	1	3	0			
86	20	1	2	2	0	0	0			
87	20	1	2	2	0	0	0			
88	20	1	2	2	0	0	0			
89	21	1	2	2	1	4	0			
90	20	1	2	2	0	0	0			
91	21	1	2	2	1	3	0			
92	20	1	2	2	1	3	0			
93	20	1	2	2	1	4	0			
94	20	1	2	2	1	3	0			
95	20	1	2	2	0	0	0			

96	19	1	2	2	0	0	0			
97	20	1	1	2	0	0	0			
98	20	1	1	2	1	1	1	3	0	1
99	20	1	2	2	1	2	1	2	0	1
100	20	2	2	2	1	3	1	3	1	1
101	20	2	2	2	1	4	0			
102	20	2	2	2	0	0	0			
103	20	2	2	2	1	0	0			
104	20	2	2	2	1	0	0			
105	20	2	2	2	1	0	0			
106	20	2	2	2	1	2	0			
107	20	2	2	2	1	2	0			
108	20	2	2	2	1	2	0			
109	20	2	2	2	1	2	0			
110	20	2	2	2	1	2	0			
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112	19	2	2	2	1	4	0			
113	19	2	1	2	1	4	0			
114	19	2	1	2	1	4	0			
115	19	1	1	2	1	4	1	2	0	1
116	20	1	1	2	1	1	1	3	1	1
117	20	1	1	2	1	1	1	5	0	1
118	20	1	2	2	1	1	1	3	0	1
119	20	1	2	2	1	1	0			
120	20	1	2	2	1	1	0			

121	20	1	2	2	1	1	0			
122	18	1	2	2	1	1	0			
123	18	1	2	2	1	0	0			
124	18	1	2	2	1	0	0			
125	19	1	2	2	1	0	0			
126	19	1	2	2	1	0	0			
127	19	1	2	2	0	4	0			
128	19	1	2	2	0	4	0			
129	19	1	2	2	0	4	0			
130	19	2	2	2	0	4	0			
131	19	2	2	2	0	3	0			
132	20	2	2	2	0	3	0			
133	20	2	2	2	0	3	0			
134	20	2	2	2	0	0	0			
135	20	2	2	2	0	0	0			
136	20	2	2	2	0	0	0			
137	19	2	2	2	0	2	0			
138	19	2	2	2	0	2	0			
139	19	1	2	2	0	2	0			
140	19	1	1	2	0	2	0			
141	19	1	1	2	0	2	0			
142	19	1	1	2	0	4	0			
143	19	1	1	2	0	4	0			
144	19	1	1	2	0	4	0			
145	19	1	1	2	0	4	0			

TOOL 2- AWARENESS REGARDING PCOD

Sample	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	**Q10**	**Q11**	**Q12**	**Q13**	**Q14**	**Q15**
1	1	0	1	1	0	0	0	0	1	1	0	1	1	0	1
2	0	0	1	0	1	1	0	0	0	0	1	1	1	0	0
3	0	1	1	1	0	0	0	1	0	0	0	0	1	0	0
4	1	1	0	0	1	0	0	1	0	0	0	1	1	0	0
5	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0
6	0	0	1	0	1	0	0	0	1	0	1	1	0	0	0
7	0	1	1	0	1	0	0	0	1	0	1	0	1	0	0
8	0	1	0	1	0	1	0	0	1	0	0	1	0	0	1
9	0	1	1	0	0	1	0	0	1	0	0	1	1	0	1
10	0	0	1	1	0	1	0	0	1	0	1	0	1	0	0
11	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1
12	0	1	1	0	0	1	0	0	1	0	0	1	1	1	0
13	0	0	1	1	0	0	0	0	0	1	1	0	0	0	1
14	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1
15	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
16	0	0	0	0	1	1	1	0	1	0	0	0	1	0	0
17	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0
18	0	0	1	0	0	1	0	0	1	0	0	1	1	0	0
19	1	1	0	0	0	1	0	0	0	1	0	0	1	1	0
20	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0
21	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0
22	1	0	0	0	0	1	0	0	0	1	0	1	1	0	0

23	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1
24	0	0	1	0	1	1	0	0	1	0	0	1	1	0	1
25	1	0	0	1	0	1	0	0	0	1	0	0	1	0	0
26	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0
27	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0
28	0	0	0	1	0	1	0	0	0	1	0	1	0	1	0
29	0	0	1	0	0	0	0	0	0	1	1	1	1	1	0
30	1	1	0	0	1	1	0	0	0	1	0	0	1	0	0
31	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0
32	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0
33	0	0	0	1	1	0	0	0	0	1	1	0	0	0	1
34	0	1	0	0	1	1	0	0	0	1	1	0	1	0	0
35	1	0	1	1	1	0	0	0	0	1	1	0	1	1	0
36	1	0	0	1	1	0	0	0	0	1	1	0	1	1	0
37	1	1	0	0	1	0	0	0	0	1	0	1	1	1	0
38	1	0	1	0	1	1	0	0	0	1	1	0	0	0	0
39	1	0	1	0	1	1	0	0	0	1	1	1	1	0	0
40	1	1	0	0	1	1	0	0	0	1	1	0	1	0	0
41	0	0	1	1	0	0	0	0	0	1	1	1	1	0	0
42	0	0	1	0	1	1	0	0	0	1	1	1	1	1	1
43	1	1	0	1	1	1	0	0	0	1	1	1	1	0	1
44	1	0	1	0	0	1	0	0	0	1	1	1	1	0	0
45	1	1	0	1	0	0	0	0	1	1	1	1	0	1	0
46	0	1	1	0	0	1	1	0	0	0	1	1	1	0	0
47	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0

48	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0
49	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0
50	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0
51	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0
52	1	0	1	1	0	0	0	0	0	1	1	1	1	1	0
53	1	0	0	0	1	1	0	0	0	0	1	1	0	1	1
54	0	1	0	0	1	1	1	1	1	0	1	1	1	1	1
55	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0
56	1	1	1	0	1	0	0	0	0	1	1	1	0	0	0
57	1	1	0	1	0	1	0	0	0	1	1	1	0	0	0
58	0	0	0	1	0	1	0	0	1	0	1	1	1	0	0
59	0	1	1	0	1	1	0	0	0	0	1	1	1	0	0
60	0	1	1	0	1	1	0	0	0	1	1	1	1	0	0
61	0	1	0	0	1	1	0	0	0	1	0	1	1	0	0
62	1	1	0	0	1	1	0	0	0	1	1	0	0	0	0
63	1	0	0	1	0	1	1	0	0	0	1	0	1	0	0
64	0	0	1	1	0	0	0	0	0	1	1	1	1	0	0
65	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0
66	1	1	0	0	1	1	0	0	0	1	1	1	1	0	0
67	1	1	0	1	0	0	0	0	0	1	1	1	1	0	0
68	1	1	0	1	0	1	0	0	0	1	1	0	1	0	0
69	1	1	1	0	1	1	1	0	0	0	1	1	1	1	1
70	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
71	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0
72	0	1	1	0	0	0	0	0	0	1	1	1	1	0	0

73	0	1	0	0	1	1	0	0	0	1	1	1	0	0	0
74	1	1	1	0	1	1	0	0	0	1	1	0	0	0	0
75	0	1	0	1	1	1	1	0	0	0	0	1	1	0	0
76	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1
77	1	1	0	1	0	1	0	0	0	1	1	1	0	0	0
78	1	0	1	1	0	1	0	0	1	1	1	1	1	0	0
79	0	0	1	0	1	1	0	0	1	1	1	1	1	1	1
80	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0
81	1	0	1	1	1	1	0	0	1	1	1	1	0	0	0
82	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0
83	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0
84	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0
85	1	0	0	1	1	1	1	0	0	1	1	1	0	0	0
86	1	0	1	1	1	1	1	0	0	1	1	1	0	0	0
87	1	0	1	0	1	1	1	0	0	1	1	1	0	0	1
88	1	0	1	0	0	1	1	0	0	0	1	0	1	0	1
89	1	0	1	0	0	1	0	0	0	0	0	0	1	0	1
90	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1
91	1	0	1	0	1	1	0	1	0	0	1	1	1	1	0
92	1	0	1	0	0	1	0	1	0	1	1	1	1	1	0
93	1	0	1	0	1	1	0	1	0	1	1	1	1	0	0
94	1	0	1	0	0	1	0	1	0	1	1	1	1	0	0
95	1	0	1	0	1	1	0	1	0	1	1	1	1	0	0
96	1	0	1	0	0	1	0	1	0	1	1	1	1	0	0
97	1	0	1	0	1	1	0	1	0	1	1	1	1	0	0

98	1	0	0	0	0	1	0	1	0	1	1	1	0	0	0
99	0	0	1	0	1	1	0	1	0	1	1	1	1	0	0
100	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0
101	0	0	1	0	1	0	1	1	0	1	1	1	1	0	0
102	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0
103	0	0	1	0	0	0	1	1	0	1	0	1	0	0	1
104	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0
105	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0
106	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0
107	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1
108	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0
109	1	1	0	0	0	0	0	0	0	1	0	0	1	0	1
110	0	1	1	0	1	0	1	1	0	1	0	0	1	0	0
111	0	1	1	0	1	0	0	0	0	0	0	0	1	0	1
112	1	1	1	0	1	0	1	1	1	0	0	0	1	0	0
113	0	0	1	1	1	0	0	0	1	0	0	0	1	0	0
114	0	0	1	1	1	0	1	1	1	0	0	0	1	0	1
115	0	1	1	1	1	0	0	1	1	0	0	1	0	0	1
116	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
117	1	0	1	1	1	0	1	1	1	0	1	1	0	0	1
118	1	0	1	1	1	1	1	1	1	0	1	1	1	0	1
119	1	1	1	1	1	0	0	1	1	0	1	1	0	0	1
120	1	1	0	1	1	1	0	1	1	0	1	0	1	0	1
121	1	1	0	1	0	0	0	1	1	0	1	0	1	0	1
122	1	0	0	1	1	1	1	1	1	0	1	1	1	0	1

123	1	0	0	1	0	0	1	1	1	0	1	1	0	0	1
124	1	0	0	1	1	1	1	0	1	0	1	1	1	0	0
125	0	0	1	1	0	0	1	0	1	0	1	1	0	0	0
126	0	0	0	1	1	1	1	0	1	1	1	1	0	0	0
127	0	0	1	1	0	0	1	0	1	1	1	1	0	0	0
128	0	1	1	1	1	1	1	0	1	0	1	1	0	0	0
129	0	1	1	0	1	1	1	0	1	1	1	0	0	0	0
130	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0
131	0	1	0	0	1	1	1	0	1	1	1	0	0	0	0
132	1	1	0	1	0	1	0	0	1	0	0	0	0	0	0
133	1	1	1	0	0	1	0	0	1	1	1	0	0	0	0
134	1	1	0	1	1	1	0	0	1	0	0	0	0	1	0
135	1	0	0	0	0	1	0	1	1	1	1	1	0	1	0
136	1	0	1	1	1	0	0	1	1	0	0	1	1	1	0
137	1	0	1	1	1	0	0	1	0	0	1	1	1	0	0
138	0	0	1	0	1	0	1	0	0	0	0	1	1	0	0
139	0	1	1	0	1	0	1	1	0	0	0	1	1	0	0
140	0	0	1	1	1	0	1	0	0	0	0	0	1	0	0
141	1	0	0	0	0	0	0	10	1	1	0	1	1	0	0
142	1	1	0	1	0	0	1	1	0	1	1	0	1	0	0
143	1	1	0	1	0	0	1	0	1	1	1	1	1	0	0
144	1	1	0	1	0	0	0	0	1	1	1	1	1	0	0
145	1	1	0	1	0	0	0	0	0	1	1	1	1	0	0

TOOL -3 RISK ASSESSMENT

Sampl	HDM	RELT	HPCOD	RELT	JUNK	FRE	EX	OFTE	TIME	TYPE	HRT	REAS	LON	STRE	CAU	DRU	FOR	DUR	BMI
1	1		1		0	1	0				1			0	1	1			1
2	1		0	1	0	2	0				1			0	2	1			1
3	1		1		0	2	1	1	2	2	1			0	2	1			1
4	1		1		1		1	1	1	1	1			1		1			1
5	1		1		0	1	0				1			0	1	1			1
6	0	1	1		1		1	1	1	3	1			1		1			1
7	1		1		0	1	0				1			0	1	1			1
8	1		1		0	1	0				1			0	2	1			1
9	1		1		0	1	0				1			0	2	1			1
10	1		1		0	1	0				1			0	2	1			1
11	0	4	1		0	2	1	1	2	4	1			1		1			0
12	0	2	1		0	2	0				1			1		1			1
13	0	3	1		0	2	0				1			0	1	1			1
14	1		1		0	2	0				1			0	1	1			1
15	0	1	1		0	1	0				1			1		1			1
16	1		1		0	2	0				1			1		1			1
17	1		1		1		0				1			0	1	1			1
18	0	3	1		0	2	1	1	1	2	1			0	1	1			1
19	0	2	1		0	1	0				1			0	3	1			1
20	1		1		0	2	0				1			0	2	1			1

21	0	3	1		0	1	0				1			1		1			1
22	1		0	2	0	1	0				1			1		1			1
23	0	1	1		0	2	0				1			0	2	1			1
24	1		1		0	2	0				1			1		1			1
25	0	2	1		0		0				1			1		1			1
26	1		1		1		0				1			1		1			1
27	1		1		1		0				1			1		1			1
28	0	1	1		1		1	1	2	1	1			1		1			1
29	1		1		0		0				1			1		1			1
30	0	5	1		0		0				1			0	2	1			1
31	0	3	1		0		0				1			0	2	1			1
32	1		1		0		1	1	3	1	1			0	2	1			1
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ANNEXURE – E

TOOL 1

SOCIO PERSONAL DATA SHEET **Sample no: -**

Instructions: - Read all the questions carefully and fill it appropriately.

1. Age …….
2. Year of study …….
3. Type of stay…….
   a. Hostel ☐
   b. Home ☐
4. Type of food
   a. Vegetarian ☐
   b. Mixed ☐
5. Do you have any previous information regarding PCOD?
   a. Yes ☐
   b. No ☐
6. If yes, specify the resource?
   a. Health personnel ☐
   b. Friends ☐
   c. Parents ☐
   d. Mass media ☐
7. Are you suffering from PCOD?
   a. Yes ☐
   b. No ☐

A. If yes,

   a. How long ?
   b. Taking any medicines… ?
   c. Lifestyle modification done (exercise, diet, medicines) ?

ANNEXURE –F TOOL-2

STRUCTURED QUESTIONNAIRE TO ASSESS THE AWARENESS REGARDING PCOD

Instructions: - Put tick mark (✔) against each appropriate answer.

It includes questions related to risk factors, signs and symptoms and lifestyle modifications

POLYCYSTIC OVARIAN DISEASE (PCOD)

1. What do you mean by PCOD?
   a) Infection of the ovaries ☐
   b) Cyst in the ovaries ☐
   c) Block in the ovaries ☐
2. Which among this is the risk factor of PCOD?
   a) Daily exercise ☐
   b) Obesity ☐
   c) Less sugar intake ☐

3. Which is the most common symptom of PCOD?
   a) Stomach pain
   b) Oily skin
   c) Irregular periods
4. What is the early sign of PCOD?
   a) Hair fall
   b) Weight gain
   c) Headache
5. What can be the reason for excessive hair growth in PCOD?
   a) Disturbed sleep
   b) Weight gain
   c) Hormonal imbalance
6. Which is the most important self-care practice for PCOD?
   a) Consuming fibre foods
   b) Regular exercise
   c) Adequate sleep

7. What specific skin changes is seen in PCOD?
   a) Blackish discolouration of neck
   b) Oily skin
   c) Rashes
8. Which hormonal imbalance is seen in POCD?
   a) Estrogen
   b) Progesterone
   c) Androgen
9. What method is used for PCOD identification?
   a) Xray
   b) MRI
   c) Ultrasound scanning
10. What is the best management option for PCOD?
   a) Hormone treatment
   b) Self treatment
   c) Stress reduction
11. How does PCOD affect menstrual cycles?
   a) Spotting
   b) Irregular periods
   c) No menstrual pain
12. What type of food can lead to PCOD?
   a) Low fat diet
   b) Junk foods
   c) Plenty of fruits and vegetables
13. What are the foods to be taken to prevent PCOD?
   a) Fast food
   b) Red meat
   c) Vegetables
14. What is the most common long-term health complication associated with PCOD?
   a) Diabetes Mellitus
   b) Heart problems
   c) Increased Blood Pressure

15. Which among the following statement is correct regarding PCOD?
    a) It does not have any correct treatment. ☐
    b) It is a successfully manageable disease. ☐
    c) It can be self-treated. ☐

ANNEXURE –G

TOOL-3

STRUCTURED QUESTIONNARIE FOR RISK ASSESSMENT OF PCOD

Instructions: - Read all the questions carefully and put tick mark (✔) against appropriate answer.

Following are the questions related to risk of PCOD SECTION -A

1. History of Diabetes mellitus in the family. Yes ☐
   No ☐
   If yes,
   a. Relation with the family member……...
2. History of PCOD in the family Yes ☐
   No ☐
   If yes,
   a. Relation with the family member……...
3. Consuming junk foods. Yes No
   ☐ ☐
   If yes,
   a. Frequency of taking junk foods
   - Daily ☐
   - Weekly ☐
   - Monthly ☐
4. Regular exercise. Yes No ☐
   If yes,
   a) How often… ?
   b) Time duration ……
   c) Type of exercise…….
5. Taking hormonal treatment. Yes ☐ No
   ☐
   If yes,
   a) Name of medicine…….
   b) Reason for taking …….
   c) How long… ?
6. Do you have any stress producing factors. Yes ☐
   No ☐
   If yes,
   a) Study related
   b) Exams
   c) Family issues

7. Use of any other drugs/medications Yes No

If yes,

a) Name of medicine…….
b) Reason for taking …….
c) How long… ?

SECTION -B

1) Weight: -
2) Height: -
3) BMI: -
4) Waist hip ratio: -

ANSWER KEY OF TOOL -2

1. B
2. B
3. C
4. B
5. C
6. B
7. A
8. C
9. C
10. A
11. B
12. B
13. C
14. A
15. B

ANNEXURE-H

PERMISSION LETTER FROM ST.THOMAS COLLEGE AND SREE PARAMEKAVU COLLEGE

ST. THOMAS COLLEGE, THRISSUR
സെന്റ് തോമസ് കോളേജ്, തൃശൂർ
(AUTONOMOUS) KERALA, INDIA - 680 001
(ഓട്ടോണമസ്) കേരളം, ഇന്ത്യ - 680 001
Estd. 1889
Web: http://stthomas.ac.in E-mail: principal@stthomas.ac.in Phone: +91 487 2420435
Affiliated to the University of Calicut NAAC Re-accredited with CGPA 3.70/4 at 'A++' Grade - 4th Cycle Kerala Govt. Aided Institution

08th January 2025

No. STC/Admn/EX_Permission/2025-01

From
The Principal

To
The Principal
Govt College of Nursing
Medical College P O
Thrissur

Sir/Madam,

Sub:- Permission to Conduct Research Study req – reg:-

Ref:-G2-1227/2024/CONTSR (17) dated 05/07/2024

As per the reference above, we have permitted to conduct a research study titled " A Study to Assess Awareness regarding Polycystic Ovarian Syndrome and its risk Assessment among College Students, Thrissur" without affecting normal class hours in our college.

08-01-25

PRINCIPAL
Dr. Martin K. A.
Principal-in-Charge
St Thomas College (Autonomous)
Thrissur - 680 001

PARAMEKKAVU COLLEGE OF ARTS AND SCIENCE
Affiliated to University of Calicut, U.O.No. 2436/2013/CU
(Managed by Sree Paramekkavu Educational, Cultural and Charitable Trust)
MLA Road, Punkunnam, Thrissur 680 002. Ph : 0487 2960800, 9961068618
E-mail : paramekkavucas@yahoo.in, Website : www.paramekkavuartsandsciencecollege.com

Ref: No.PCAS-PD-24/25-009

Date..... 21/08/2024

From,

Principal
Paramekkavu College of Arts and Science

To,

Gopika R S
1st Year M.Sc Nursing
Govt College of Nursing,Thrissur

This is for your kind information that, Ms. Gopika R S, 1st Year MSc Nursing student of Govt College of Nursing Thrissur, has permitted to do research study titled **"A Study to assess awareness regarding polycystic ovarian syndrome and its risk assessment among college students, Thrissur"** as a part of MSc Nursing curriculum without affecting the normal class hours of students.

Yours Faithfully

Dr.(Capt) SuseelaMenon R
Principal

PRINCIPAL
Paramekkavu College of Arts and Science
Thrissur-02

ANNEXURE-I

LIST OF EXPERTS OF CONTENT VALIDITY

1) Dr. Linda Varghese Professor
   Amala College of Nursing, Thrissur

2) Mrs. Shani S Rajappan Associate professor
   Kims College of Nursing, Trivandrum

3) Ms. Bincy Mathew Professor
   West fort College of Nursing, Thrissur

4) Mrs. Sonia Sebastian Professor
   KPBNI College of Nursing, Mangalore

5) Lt Col Dr. Rejeena P F Professor
   PK Das College of Nursing, Vaniyamkulam

6) Sr. Josmy Maria MA English
Alphonsa College Pala,
Kottayam

ANNEXURE –J

APPROVAL LETTER FROM INSTITUTIONAL ETHICS COMMITTEE

INSTITUTIONAL ETHICS COMMITTEE

GOVT. COLLEGE OF NURSING, MEDICAL COLLEGE P.O, THRISSUR - 680596

Phone : 0487-2208205, 2201366 email - principalcontsr@gmail.com

Chairperson:
Prof. Dr. M. A. Andrews
Principal, PK DAS Institute of
Medical Sciences, Vaniyamkulam.
Tel: (O)- 0466 234 4500
Email : anjulioness@gmail.com

Member Secretary:
Dr. Sujitha E.
Assistant Professor
Govt. College of Nursing,
Thrissur.
sujithaajith@yahoo.co.in

Members

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Kerala University of Health Sciences
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Email: drindirarun76@gmail.com

Dr. Nimisha C.R.
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Dept. of General Surgery,
Email : dr.nimishac.r@gmail.com
Govt. Medical College, Thrissur

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Oppo. Nirmala Convent School,
Ayyanthole, Thrissur.
Email: sathyajithvk123@gmail.com

Fr. Johnson Anthikkat
Director & Principal,
Pope Paul Mercy Home,
Peringandoor, Thrissur.
Email: frjohnson05@gmail.com

Mr. Narayanan A.G.
Ammanath House,
Edakkulam, Thangaloor, Thrissur.

IEC No: G2-312/2015/CONTSR (15) Dated 16/06/2022 Date : 15/06/2024

Communication regarding decision of Institutional Ethics Committee

The Institutional Ethics Committee, Govt. College of Nursing, Thrissur has evaluated the Research Project entitled Awareness regading Polycystic Ovarian Disease and its Risk Assessment among College Students

Principal Investigator: GOPIKA . R.S

New Review ✓ Revised Review [ ] Expedited Review [ ]

Decision of IEC : Recommended [ ] Recommended with Suggestions ✓

Revision [ ] Rejected [ ]

Suggestions /Remarks:

Recommended a period of : ONE YEAR

Please Note:

- Inform IEC immediately in case of any adverse events and serious adverse events
- Inform IEC in case of any change of study procedure, site and investigator
- The permission is only for a period mentioned above.
- Annual report should be submitted to IEC
- Members of the IEC have the right to monitor the trial with prior intimation
- Submit copy of dissertation/Thesis after completion of the study.

Signature: Chairperson Member Secretary-IEC

Chairperson
INSTITUTIONAL ETHICS COMMITTEE
Govt. College of Nursing
Thrissur-680 596
Kerala

Secretary
INSTITUTIONAL ETHICS COMMITTEE
Govt. College of Nursing
Thrissur-680 596
Kerala

ANNEXURE –K PLAGIARISM CHECKING CERTIFICATE

DrillBit

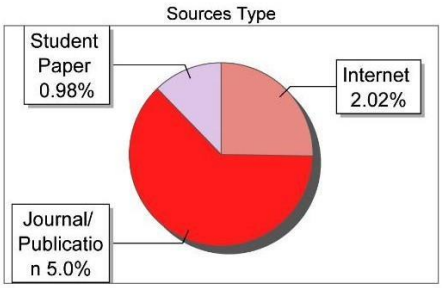
The Report is Generated by DrillBit Plagiarism Detection Software

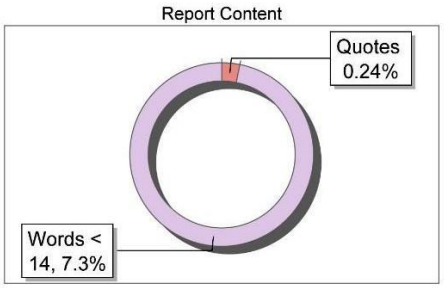
Submission Information

Author Name	Gopika R.s
Title	AWARENESS REGARDING POLYCYSTIC OVARIAN DISEASE AND ITS RISK ASSESSMENT AMONG COLLEGE STUDENTS
Paper/Submission ID	3533939
Submitted by	ankitasharma898200@gmail.com
Submission Date	2025-04-23 07:03:39
Total Pages, Total Words	53, 12200
Document type	Thesis

Result Information

Similarity **8 %**





Exclude Information

Quotes	Excluded
References/Bibliography	Excluded
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Excluded Source	**0 %**
Excluded Phrases	Excluded

Database Selection

Language	English
Student Papers	Yes
Journals & publishers	Yes
Internet or Web	Yes
Institution Repository	Yes

A Unique QR Code use to View/Download/Share Pdf File

ANNEXURE –L INFORMED CONSENT MALAYALAM

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Cu]T\¯n\pth-n tiJcn¡p¶ hnhc§Ä XnI¨pw clkyw Bbn kq£n¡p¶XmsW¶pw, t]cphnhc§Ä]ckyam¡nsÃ¶pw Ah]T\mhiy¯n\p am{Xta D]tbmKn¡pÅpsh¶pw Rm³ a\knem¡p¶p. Cu]T\¯nÂ GÀs]«mepw CsÃ¦nepw Fsâ]T\s¯ _m[n¡nÃ F¶ a\knemIp¶p. Cu]T\¯n\pth-n F\n¡v bms[mcp hn[km¼¯nI _m[yXIÄ CsÃ¶pw GXp kab¯pw]n·mdm\pÅ kzmX{´yw Ds-¶pw Rm³ a\knem¡p¶p.
]T\s¯kw_Ôn¨pÅ Fs´¦nepw kwib§tfm tNmZy§tfm Ds-¦nÂ F\n¡v tKm]nI.BÀ. Fkv s\ _Ôs¸Smhp¶XmsW¶pw a\Ênem¡n¯¶n«p-v. FÃm \n_Ô\Ifpw a\Ênem¡n Cu]T\¯n\v]qÀ®k½Xw Rm³ \ÂIp¶p.

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ANNEXURE –M

PARTICIPANT INFORMATION SHEET – MALAYALAM

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ANNEXURE –N

LESSON PLAN ON POLYCYSTIC OVARIAN DISEASE

LESSON PLAN ON POLYCYSTIC OVARIAN DISEASE

Name of teacher: - Ms. Gopika.R.S
Date and time: -23-01-25@12pm
Subject: - OBG
Duration: -30 min
Topic of lesson: - PCOD
Venue: - Auditorium

Previous knowledge: - The group has some knowledge regarding PCOD from mass media, friends, relatives and parents.
Methods of teaching: - Lecture cum discussion
AV aids: - Chalkboard, PPT

Central objective: - At the end of the class the group will acquire the knowledge regarding PCOD, apply this knowledge in their practical life and develop a positive attitude.

Specific objectives: -

1. introduce the topic
2. define PCOD
3. mention the incidence of PCOD
4. enlist the risk factors of PCOD
5. enumerate the etiology of PCOD
6. explain the pathophysiology of PCOD
7. describe the clinical manifestations of PCOD
8. list down the diagnostic measures of PCOD
9. discuss the complication of PCOD
10. explain the management of PCOD

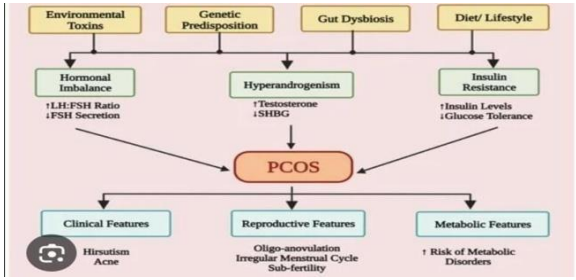
Time	Specific objective	Content	Teacher's acitivity	Learner's activity	Av - aids	Evaluation
1min	Introduce the topic	**INTRODUCTION** Polycystic Ovary Disorder (PCOD) is a common endocrine disorder affecting women of reproductive age, characterized by irregular menstrual cycles, hyperandrogenism, and polycystic ovaries. PCOD is a leading cause of infertility, metabolic dysfunction, and psychological distress, impacting quality of life. Early diagnosis and comprehensive management are crucial to address the physical and emotional aspects of this complex disorder divisions.	researcher introduce the topic	Listening	PPT	
1min	Define PCOD	**DEFINITION** According to "Williams" A hormonal disorder common among women of reproductive age. It is characterized by the presence of multiple cysts on the ovaries, which can lead to a variety of symptoms including irregular menstrual cycles, excessive hair growth (hirsutism), acne, and obesity**.**				What is the definition of PCOD?

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av-aids	Evaluation
1min 5min	Mention the incidence of PCOD Enlist the risk factors of PCOD	**INCIDENCE** It is the most common disorder occur in women under 30 years of age group. Approximately 5 to 10 percent of women of childbearing age. **RISK FACTORS** **Genetic Predisposition**: A family history of PCOD/PCOS or other hormonal disorders increases the likelihood of developing the condition. If a mother or sister has PCOD/PCOS, the risk is higher. **Insulin Resistance and Hyperinsulinemia**: Many women with PCOD/PCOS have insulin resistance, which can lead to higher insulin levels in the blood. This can increase androgen production by the ovaries, exacerbating symptoms. **Obesity**: Excess weight can contribute to insulin resistance and is a common feature in women with PCOD/PCOS. However, PCOD/PCOS can also occur in women of normal weight.	researcher mention the incidence of PCOD researcher enlist the risk factors of PCOD	Listening Listening	PPT PPT	What is the incidence rate of PCOD ? What are the risk factors of PCOD?

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		Hormonal Imbalances: Abnormal levels of hormones such as increased androgens (male hormones) and luteinizing hormone (LH) relative to follicle- stimulating hormone (FSH) are associated with PCOD/PCOS. **Inflammation:** Low-grade inflammation is common in women with PCOD/PCOS, and it can contribute to insulin resistance and higher androgen levels. **Early Menarche**: Starting menstruation at an early age may be linked to an increased risk of developing PCOD/PCOS later in life. **Sedentary Lifestyle**: Lack of physical activity can exacerbate insulin resistance and contribute to weight gain, which can increase the risk of developing PCOD/PCOS. **Diet**: A diet high in refined carbohydrates and sugars can lead to insulin resistance and weight gain, which are risk factors for PCOD/PCOS. **Polycystic Ovary Syndrome (PCOS) commonly affects the following groups:** Reproductive-Aged Women: PCOS primarily affects women of reproductive age, typically between the ages of 15 and 44. It often becomes noticeable during adolescence or early				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
5 min	Enumerate the etiology of PCOD	adulthood when menstrual irregularities and signs of hyperandrogenism (such as acne and excessive hair growth) first appear **ETIOLOGY** **1. Genetic Factors:** ● **Family History**: PCOD/PCOS tends to run in families, suggesting a genetic component. Multiple genes may be involved, affecting hormone production, insulin resistance, and ovarian function ● **Genetic Mutations**: Specific genetic mutations related to insulin signaling and androgen production might contribute to the development of PCOD/PCOS. **2. Hormonal Imbalances:** ● **Increased Androgens**: Women with PCOD/PCOS often have elevated levels of androgens (male hormones), such as testosterone, which can interfere with normal ovulation and lead to symptoms like hirsutism and acne.	researcher enumerate the etiology of PCOD	Listening	PPT	What are the etiological factors of PCOD ?

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		• **Elevated LH Levels**: Increased luteinizing hormone (LH) relative to follicle-stimulating hormone (FSH) can stimulate the ovaries to produce more androgens. • **Insulin Resistance**: High insulin levels can lead to increased androgen production by the ovaries and contribute to weight gain and metabolic issues. 3. **Environmental and Lifestyle Factors**: • **Diet and Obesity**: A diet high in refined carbohydrates and sugars can exacerbate insulin resistance and weight gain, increasing the risk of PCOD/PCOS. • **Sedentary Lifestyle**: Lack of physical activity can contribute to obesity and insulin resistance. • **Endocrine Disruptors:** Exposure to certain chemicals and environmental pollutants may affect hormonal balance and contribute to the development of PCOD/PCOS.				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
3min	Explain the pathophysiology of PCOD	**PATHOPYSIOLOGY**  	Researcher explain the pathophysiol - ogy of PCOD	Listening	PPT	What is the pathophysio - logy of PCOD?
10 min	Describe the clinical manifestati-on of PCOD	**CLINICAL MANIFESTATIONS** Women with PCOD may present with a variety of symptoms, which can vary widely in severity. Common clinical manifestations include: ✓ **Menstrual Irregularities** ▪ Oligomenorrhea: Infrequent menstrual periods, typically defined as fewer than eight periods per year. ▪ Amenorrhea: Absence of menstrual periods for more than three consecutive months. ▪ Menorrhagia: Heavy menstrual bleeding, although this is less common.	describe the clinical manifestation of PCOD	Listening	PPT	What are the clinical manifestations of PCOD?

Time	Specific objective	Content	Teacher's activity	Learner's Activity	Av - aids	Evaluation
		✓ **Hyperandrogenism** ▪ Hirsutism: Excessive hair growth in a male-pattern distribution, such as on the face, chest, and back, due to elevated levels of androgens. ▪ Acne: Persistent and often severe acne, particularly on the face, chest, and back. ▪ Alopecia: Thinning hair or male-pattern baldness, often seen as thinning at the crown of the head. ✓ **Metabolic Issues** ▪ Obesity: A significant number of women with PCOS are overweight or obese, particularly with central (abdominal) obesity. ▪ Insulin Resistance: Difficulty in utilizing insulin effectively, leading to elevated blood insulin levels and often contributing to weight gain and type 2 diabetes. ▪ Type 2 Diabetes: Increased risk due to insulin resistance. ▪ Dyslipidemia: Abnormal cholesterol levels, including elevated LDL (bad cholesterol) and lowered HDL (good cholesterol).				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		✓ **Infertility** ▪ Anovulation: Lack of ovulation leading to difficulty in conceiving. ▪ Subfertility: Reduced fertility, requiring longer time or medical assistance to conceive. ✓ **Psychological Symptoms** ▪ Depression: Higher prevalence of depressive symptoms. ▪ Anxiety: Increased anxiety levels. ▪ Low Self-Esteem: Due to physical symptoms such as weight gain, hirsutism, and acne. ▪ Eating Disorders: Higher risk of disorders such as binge eating. ✓ **Dermatological Issues** ▪ Acanthosis Nigricans: Dark, thickened patches of skin, often found on the neck, groin, and underarms, associated with insulin resistance. ▪ Skin Tags: Small, benign growths, often found in areas where skin rubs together, such as the neck and armpits.				

		✓ **Cardiovascular Risks** ▪ Hypertension: Increased blood pressure, particularly in women with obesity and insulin resistance.				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
2min	List down the diagnostic measures of PCOD	▪ Increased Risk of Heart Disease: Due to metabolic syndrome, dyslipidemia, and hypertension. ▪ **Reproductive Tract Issues** ▪ Endometrial Hyperplasia: Thickening of the uterine lining due to prolonged periods of unopposed estrogen, increasing the risk of endometrial cancer. ▪ Polycystic Ovaries: Multiple small cysts on the ovaries, detectable by ultrasound. ▪ **Other Symptoms** ▪ Fatigue: Often reported due to underlying metabolic issues. ▪ Sleep Apnea: Particularly in women who are obese, characterized by pauses in breathing during sleep. ▪ Non-Alcoholic Fatty Liver Disease (NAFLD): Accumulation of fat in the liver, linked to insulin resistance and obesity. **DIAGNOSIS OF PCOD** ▪ Rotterdam Criteria	researcher list down the diagnostic measures of PCOD	Listening	PPT	What are the diagnostic measures of PCOD?

		▪ Detailed Medical History and Physical ▪ Examination ▪ Pelvic Ultrasound ▪ Hormonal Evaluation				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
2min	Discuss the complication of PCOD	▪ Glucose Tolerance Test ▪ Ferriman-Gallwey Scale ▪ Reproductive Complications Infertility ▪ Pregnancy Complications Gestational Diabetes ▪ Preeclampsia Preterm Birth Miscarriage ▪ Metabolic Complications ▪ Insulin Resistance and Type 2 Diabetes Metabolic Syndrome ▪ Cardiovascular Complications Hypertension (High Blood Pressure) Dyslipidemia ▪ Heart Disease **COMPLICATIONS** ✓ **Endocrine Complications** ▪ Obesity ▪ Sleep Apnea ✓ **Psychological Complications** ▪ Depression and Anxiety ▪ Eating Disorders: Increased risk of developing eating disorders such as binge eating due to weight	researcher discuss the complicatio -n of PCOD	Listening	PPT	What are the complicati -ons of POCD?

		concerns and psychological stress. ✓ **Dermatological Complications** ▪ Hirsutism, Alopecia, Acne ✓ **Long-term Health Complications** ▪ Non-Alcoholic Fatty Liver Disease (NAFLD) Chronic Inflammation, Venous Thromboembolism				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
8min	Explain the management of PCOD	**Managing Complications** ▪ Effective management of PCOS involves a multidisciplinary approach, including: ▪ Lifestyle Changes: Weight management, healthy diet, and regular physical activity. ▪ Medications: Insulin-sensitizing agents (like metformin), hormonal contraceptives, anti-androgens, and medications to manage specific symptoms (e.g., acne, hirsutism). ▪ Regular Monitoring: Regular check-ups to monitor blood sugar levels, cholesterol levels, blood pressure, and screening for endometrial abnormalities. **MANAGEMENT AND TREATMENT** ▪ Managing PCOD involves a multifaceted approach aimed at addressing the various symptoms and reducing the risk of complications. The treatment plan is often tailored to the individual's specific symptoms and goals, such as improving fertility or managing metabolic issues. ✓ **Lifestyle Modifications** ▪ **Dietary Changes:**	Student teacher explains the management of PCOD	Listening	PPT	What is the management of PCOD?

		• Balanced Diet: Emphasize a balanced diet rich in fruits, vegetables, whole grains, lean				

Time	Specific objective	Content	Teacher's activity	Learner's Activity	Av - aids	Evaluation
		● proteins, and healthy fats. ● Low Glycemic Index Foods: Foods that do not cause rapid spikes in blood sugar levels can help manage insulin resistance. Examples include whole grains, legumes, and non-starchy vegetables. ● Reduced Sugar and Refined ● Carbohydrates: Minimizing intake of sugary foods and refined carbohydrates can improve insulin sensitivity and aid in weight management. ▪ **Physical Activity:** ● Regular Exercise: At least 150 minutes of moderate-intensity aerobic exercise per week, along with strength training exercises. ● Weight Loss: For overweight or obese women, even a modest weight loss of 5-10% of body weight can significantly improve symptoms and metabolic parameters. ▪ **Behavioral Changes:**				

		• Stress Management: Techniques such as mindfulness, yoga, and meditation can help reduce stress, which may exacerbate PCOS symptoms.				

Time	Specific objective	Content	Teacher's activity	Learner's Activity	Av aids	Evaluation
		● Sleep Hygiene: Ensuring adequate and quality sleep is important for overall health and can help in managing PCOS. ✓ **Pharmacological Treatments** ● Hormonal treatment ● Anti-Androgens: to reduce the hormone androgen ● Metformin: Improves insulin sensitivity, helps with weight loss, and may aid in restoring regular menstrual cycles. ● Ovulation Induction: to correct ovulation ● Dermatological Treatments: - certain creams and procedures like laser treatments can be done to remove excessive hairs and acnes. ✓ **Psychological Support** ● Counseling and Therapy: ● Cognitive Behavioral Therapy (CBT): Effective for managing depression, anxiety, and eating disorders. ● Support Groups: Connecting with others who have PCOS can provide emotional				

		support and practical advice. **Medications:** Antidepressants and Anti-Anxiety Medications: Prescribed when necessary to manage severe psychological symptoms.				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		✓ **Regular Monitoring and Follow-Up** ▪ **Endometrial Health:** ● Ultrasounds and Biopsies: To monitor endometrial thickness and prevent hyperplasia or cancer, especially in women with prolonged amenorrhea. ▪ **Metabolic Health:** ● Regular Screening: For glucose intolerance, diabetes, lipid levels, and cardiovascular risk factors. ▪ **Reproductive Health:** ● Fertility Assessment: For women trying to conceive, regular monitoring of ovulation and fertility status. **ALTERNATIVE AND COMPLEMENTARY THERAPIES** ● Inositol Supplements: Myo-inositol and D-chiro-inositol have shown benefits in improving insulin sensitivity and ovulation. ● Herbal Remedies: Some herbs like spearmint tea may help reduce hirsutism,				

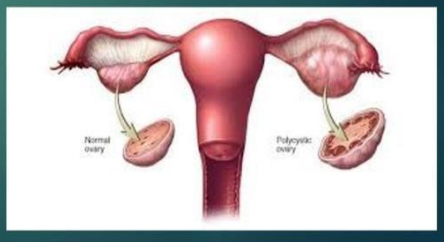
		though scientific evidence is limited.				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		● Acupuncture: Some studies suggest it may help with menstrual regularity and ovulation. ▪ **Surgical Options** ● Ovarian Drilling: A laparoscopic procedure used to induce ovulation in women who do not respond to medical treatment, though it is less commonly used due to potential risks. **SUMMARY** Today we discussed about definition, risk factors, etiology, pathophysiology, clinical manifestations, diagnosis and management of PCOD. **RECAPITULATION** 1. What are the clinical features of PCOD? 2. What is the management of PCOD? **CONCLUSION** Polycystic Ovarian Disease (PCOD) is a complex and multifaceted condition that requires a comprehensive approach to management. While the exact etiology remains unclear, a combination of genetic and environmental factors is believed to play a role. Effective management strategies include lifestyle modifications, pharmacological treatments, and, in some cases, surgical interventions. Addressing the psychosocial aspects of PCOD is equally important for improving the overall				

		quality of life for affected individuals.				

Time	Specific objective	Content	Teacher's activity	Learner's activity	Av - aids	Evaluation
		Ongoing research and advancements hold promise for better understanding, diagnosing, and treating this prevalent condition, ultimately improving outcomes for women with PCOD. **BIBLIOGRAPHY** 1. "Polycystic Ovary Syndrome: Current Concepts in Pathophysiology and Treatment" by Ricardo Azziz (Azziz R. Polycystic ovary syndrome: current concepts in pathophysiology and treatment. Springer; 2007). 2. "PCOS: The Dietitian's Guide" by Clare Collins and Fiona McCullough (Collins C, McCullough F. PCOS: the dietitian's guide. Wiley-Blackwell; 2013). 3. Polycystic Ovary Syndrome (PCOS): A Guide for Women" by Angela Grassi and Stephanie Mattei (Grassi A, Mattei S. Polycystic ovary syndrome 4. (PCOS): a guide for women. American Diabetes Association; 2014). 5. "Healing PCOS: A 21-Day Plan for Reclaiming Your Health and Life with Polycystic Ovary Syndrome" by Amy Medling (Medling A. Healing PCOS: a 21- day plan for reclaiming your health and life with polycystic ovary syndrome.				

POLYCYSTIC OVARIAN DISEASE



DEFINITION

- According to "Williams" A hormonal disorder common among women of reproductive age. It is characterized by the presence of multiple cysts on the ovaries, which can lead to a variety of symptoms including irregular menstrual cycles, excessive hair growth (hirsutism), acne, and obesity.

INCIDENCE

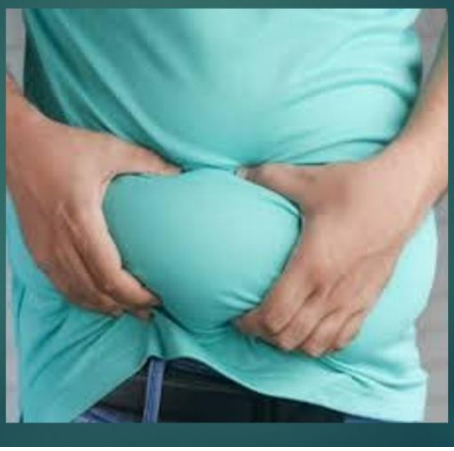
- It is the most common disorder occur in women under 30 years of age group .
- Approximately 5 to 10 percent of women of childbearing age .


RISK
FACTORS


Genetic Predisposition


Insulin Resistance and
Hyperinsulinemia

Obesity



Hormonal Imbalances

Early Menarche

Sedentary Lifestyle

Diet

ETIOLOGY

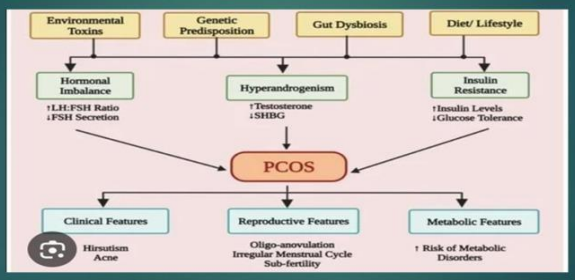
a. Genetic Factors:

- Family History
- Genetic Mutations

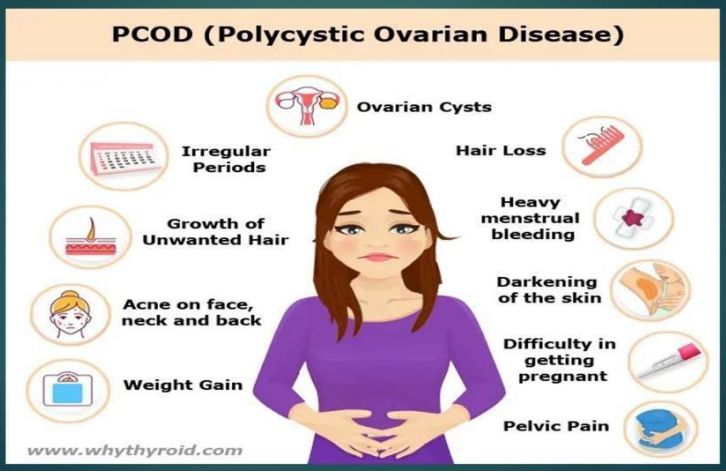
b. Hormonal Imbalances

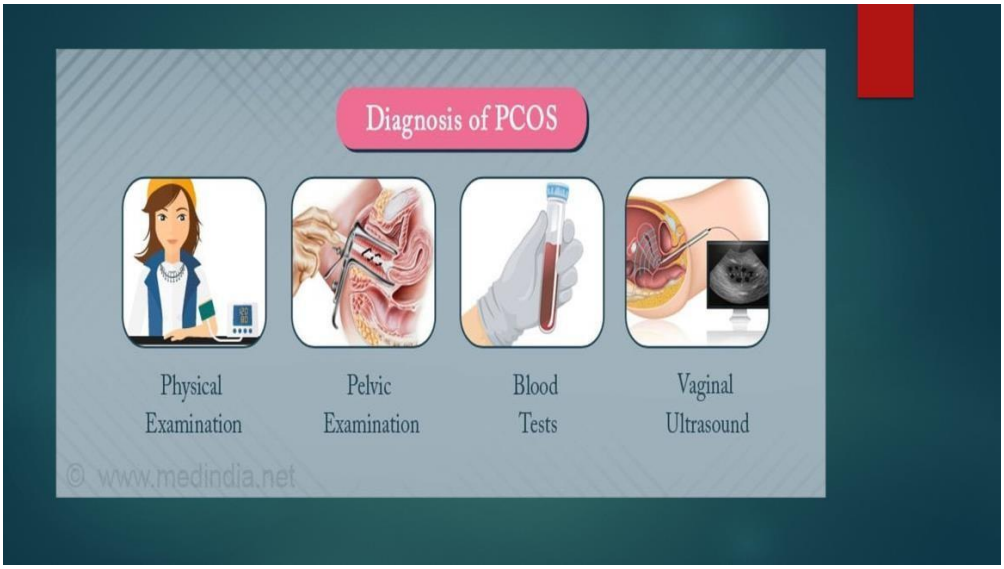
- Environmental and Lifestyle Factors

PATHOPHYSIOLOGY



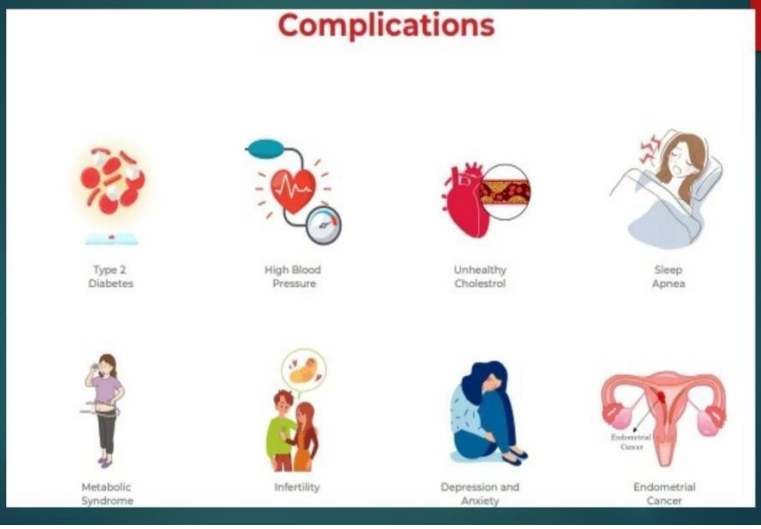
CLINICAL MANIFESTATIONS





- •Rotterdam Criteria
- •Detailed Medical History and Physical Examination
- • Pelvic Ultrasound
- • Hormonal Evaluation
- • Glucose Tolerance Test
- • Ferriman-Gallwey Scale

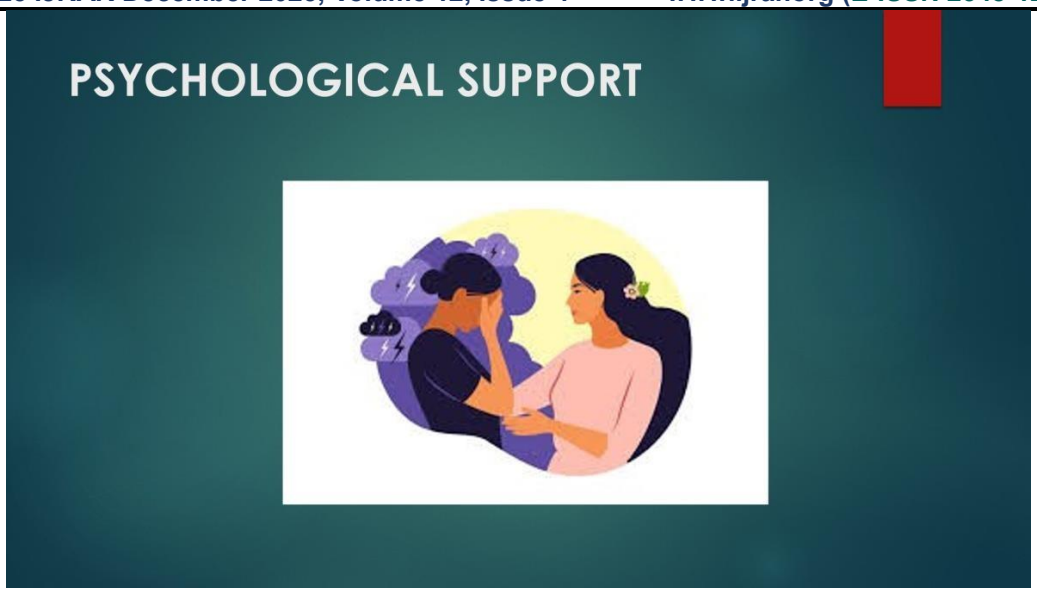
SCANNING



MANAGEMENT

MEDICINES

SKIN TREATEMNTS


PSYCHOLOGICAL SUPPORT

ANNEXURE – O CALIBRATION

CERTIFICATE

Medical Engineering & Services
Things Beyond Thoughts
ISO 9001-2015 certified company

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Kokkalai,Thrissur-21. Ph: 0487 2420367
Email: mescalibration.tsr@gmail.com
Visit us @www.mescalibration.com

CALIBRATION CERTIFICATE

Certificate No.	MES/24-25/GCONT/WM/D01	Date of Issue : 18/11/2024 Calibration Done On : 18/11/2024 Calibration Due On : 17/11/2025
Customer Name	**Gopika R.S, Government College of Nursing, Thrissur.**	

DETAILS OF DEVICE UNDER CALIBRATION

Equipment Name	Make / Model	Serial No	Asset ID	Location
Weighing Machine	Gravis	29694	WM001	-

DETAILS OF MASTER EQUIPMENT USED

Sl No.	Master Equipment	Make / Model	Serial No.	Reference ID	Cal. Due
1	Standard Weights	Cast Iron	-	MCPL/24 -25/NI -13 - 03	03/02/2025
2	Digital Thermo Hygrometer	Equinox & EQ – 308 CTH	20191602	TVCSPL 24/06/0694 - 01	12/06/2025

The instruments used for calibration are under valid calibration and are traceable to National Standards

Environmental Conditions	Temperature	27 °C	Relative Humidity	55 %

PERFORMANCE DATA

Standard Reading	Displayed Reading (from Equipment)	Tolerance
5 Kg 10 Kg	5.9 Kg 10 Kg	1 Kg to 20 Kg ± 0.05 Kg
20 Kg 30 Kg 50 Kg	20 Kg 30 Kg 50 Kg	20 Kg to 50 Kg ± 0.1 Kg
80 Kg 100 Kg	79.9 Kg 100 Kg	50 Kg to 100 Kg ± 0.2 Kg

Calibration Status	Pass	✓	Fail	

Calibrated By
Shigeesh M G (Service Engineer)

Approved By
Binoj Thomas (Quality Manager)

MEDICAL ENGINEERING & SERVICES THRISSUR-21

NB: Results reported are valid at the time of and under the stated conditions of measurements. This report shall not be reproduced without written approval by Medical Engineering & Services.

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