THE QUALITY OF LIFE AMONG WOMEN WITH POLYCYSTIC OVARIAN DISEASE ATTENDING GYNAE OPD

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BACKGROUND OF THE STUDY

Introduction

Woman has to go through many cycles in her life i.e. puberty, birth process etc. Women health tends to concentrate exclusively on the childbearing years, and, on problems directly related to pregnancy and childbirth, but women's health needs extend throughout their life cycle, and beyond their reproductive role. Besides the special health needs related to reproduction and childbearing, women are also exposed to most of the health hazards which affect the life of women.[1]

The endocrine system controls the way body functions. It produces hormones that travel to all parts of body to maintain tissues and organs. Gonadotrophin releasing hormone, follicle stimulating hormone, lutenising hormone, estrogen and progesterone are the main hormones that regulate the female

reproductive system. There are three major estrogens, known as estradiol, estrone, and estriol. These work together to promote the healthy development of female sex characteristics during puberty and to ensure fertility. When there is excess production of these hormones, it leads to weight gain, premenstrual syndrome,menstrual disturbances like irregular and heavy bleeding, ovarian cysts etc. If these hormones produced in less amount it leads to anxiety, irritability, anger etc.[2]

Menstruation is a periodic flow of blood and cells from the lining of the uterus and occurring about every 28 days in women. Menstruation commences at puberty (usually between age 10 and 17). The onset of menstruation, called menarche, signals the body's coming readiness for childbearing. If there is imbalance or excessive production of female reproductive hormones like Gonadotrophin releasing hormone ,follicle stimulating hormone, lutenising hormone, estrogen and progesterone, may cause the menstruation disturbances ,obesity ,benign tumours in pituitary gland ,adrenal gland disorders, fibrocystic breast disease and polycystic ovarian disease etc. Out of these polycystic ovarian disease is most common reproductive problem among women.[3]

Polycystic ovarian disease is a reproductive endocrine disorder in which a woman's ovaries produce excessive amounts of "male" hormones (androgens) such as testosterone. Polycystic ovarian disease affects about ten percent of Indian women and is a common cause of infertility, menstrual irregularity, obesity, excessive hair growth. This underappreciated condition is the most common cause of female infertility in India.[4]

A prospective study was conducted on the prevalence of polycystic ovarian disease among women of reproductive age in United States of America. 400 women from the general population were selected as study sample. The prevalence of polycystic ovarian disease in women is checked by polycystic ovarian syndrome questionnaire. Results showed that 4.7% of white women and 3.4% of African American women had polycystic ovarian disease. A similar rate of 4% to 6% has been found in other populations. The rates of Polycystic ovarian disease in mothers and sisters of women with polycystic ovarian disease were 24% and 32% respectively.[5]

Polycystic ovarian disease is a problem in which a woman's hormones get imbalanced. It can cause problems with the menstrual periods and make it difficult to get pregnant. It may also cause unwanted changes in the look. If it is not treated, over time it can lead to serious health problems, such as diabetes and heart disease. Polycystic ovarian disease is common, affecting as many as 1 out of 15 women. It is estimated that between 22 and 33 per cent of women have polycystic ovaries. Some women go on to develop polycystic ovary disease, which means they have other symptoms in addition to polycystic ovaries. It occurs amongst all races and nationalities and is a leading cause of infertility.[6]

Polycystic ovaries contain a large number of harmless cysts that are not bigger than 8mm each. The cysts are under-developed follicles which contain eggs that have not developed properly. Often in Polycystic ovarian disease, these follicles are unable to release an egg and results in anovulation. Ovulation-related infertility in women affects approximately 50% of women population. Hence, the

Polycystic ovarian disease is recognized as having a major impact throughout life on the gynecological and metabolic health of women.[7]

Present day lifestyle, food habits, environmental exposure to toxins along with hereditary predisposition for metabolic syndrome (obesity, hyperlipidemia, diabetes and hypertension) and stress has contributed to the common problem faced by today's female population which is Polycystic ovarian disease because sedentary lifestyles and lack of exercises and fast food consumption by the women are leading to the rise in cases of polycystic ovarian disease especially in urban population.[8]

A case-control study was conducted to assess psychological distress and health related quality of life among women with Polycystic ovarian disease in Sri Lanka. 146 diagnosed women with Polycystic ovarian disease,170 age-matched controls selected from community screening of eligible women between 18 and 39 years of age as sample by convenient sampling. World Health Organization Quality of Life questionnaire and General Health Questionnaire were used to assess quality of life and psychological distress. The General Health Questionnaire score was significantly higher among women with Polycystic ovarian disease than among controls, indicating greater psychological distress. The physical, psychological and social relationships scores were significantly lower in women with Polycystic ovarian disease than in controls, indicating poorer quality of life.[9]

A comparative study was conducted on health-related quality of life in women with polycystic ovarian disease and healthy controls. Total 120 women, out of which 60 women with polycystic ovarian disease and 60 were healthy controls taken as study sample by purposive sampling technique. Women with Polycystic ovarian disease were taken from an outpatient clinic and a control group was taken as sample from a family planning clinic. Short Form-36 and the Polycystic Ovary Syndrome Questionnaire were used as tool. Results showed that women with Polycystic ovarian disease scored lower in both Short Form-36 and in Polycystic Ovary Syndrome Questionnaire. Women with Polycystic ovarian disease has a negative impact on health related quality of life.[10]

There is no cure for polycystic ovarian disease but treatment is available to alleviate the symptoms. This disease is so dreadable that such women are unable to conceive. Medical management and lifestyle modification are the best way to treat the disease. So, the goal is to assess the quality of life women with polycystic ovarian disease in order to do lifestyle modifications. The ongoing goals are to prevent long-term complications and to improve the fertility of the women.[11]

Need of the study

Today polycystic ovarian disease is preferred by researchers because researchers do not know the actual cause of this disease and not all women with polycystic ovarian disease have all the symptoms described by Stein-Leventhal. It is now increasingly perceived as disorder of changed lifestyles and is a rainbow metabolic syndrome. We can lower our health risk by knowing about polycystic ovarian disease and related female infertility and taking advantage of the management options available.[12]

Polycystic ovarian disease is the most common hormonal disorder in women of reproductive age. Polycystic ovarian disease is a condition where enlarged cysts are located on the outer edge of each ovary. Women with Polycystic ovarian disease have difficulty becoming pregnant and may have high levels of androgen hormones from the ovary and adrenal gland. When a woman gets affected with polycystic ovary disease, her pituitary gland may discharge high levels of luteinising hormone and the ovaries may make excess androgens. This disrupts the normal menstrual cycle, and may lead to infertility, excess body hair and acne. Other organ systems that can be affected by polycystic ovarian disease include the brain, pancreas, liver, muscle, blood vasculature, and fat.[13]

The American College of Nurse-Midwives found that between 5 and 30 percent of women have some characteristic of polycystic ovarian disease. The disorder is probably the most common hormonal abnormality in women of reproductive age and certainly is a leading cause of infertility. Between 1 in 10 and 1 in 20 women of childbearing age has polycystic ovarian disease. As many as 5 million women in the United States may be affected. It can occur in girls as young as 11 years old.[14]

Polycystic ovarian disease is the most common problem that encounter with fertility of women in reproductive age. The prevalence of polycystic ovaries in Indian subcontinent Asian women is very high. The prevalence of polycystic ovarian disease in general population has been estimated to be 5% to 10% of women of reproductive age.[9] 70 to 80% of women suffer from infertility primarily due to anvolution. The highest reported prevalence of polycystic ovarian disease has 52% amongst South Asian Women.[15]

Polycystic ovarian disease affects 7-10% of women of childbearing age (18 to 45 years).Polycystic ovarian disease is the most common hormonal disorder among women of reproductive age and is a leading cause of infertility. Unfortunately, this disorder often goes undiagnosed because of its seemingly unrelated symptoms. Polycystic ovarian disease was responsible for 18% of infertility and 40% of hirsutism cases in a study conducted at Srinagar.[16]

Polycystic ovarian disease is the most common cause of female infertility related to the absence of ovulation (called anovulatory infertility). In fact, most women don't find out that they have polycystic ovarian disease until they try to get pregnant, but are not successful. However, researches showed that many of the features and some of the symptoms of polycystic ovarian disease are present before a girl has her first menstrual period—and that the impact of polycystic ovarian disease goes beyond infertility.[17]

According to polycystic ovarian disease Foundation, established in the United States to spread awareness regarding polycystic ovarian disease among public, a vast majority of United Status population has no knowledge of polycystic ovarian disease, including many women and adolescent girls affected by polycystic ovarian disease. Females must be aware of symptoms, health precautions, and risks for diseases associated with polycystic ovarian disease in order to help prevent future complications.[18]

A comparative cross-sectional study was conducted to compare the health related quality of life of South Asian and white Caucasian women with Polycystic ovarian disease. 42 South Asian and 129 Caucasian women diagnosed with Polycystic ovarian disease selected as sample by convenient sampling

technique from the gynaecology outpatient clinics of two university teaching hospitals in Sheffield and Leeds. Polycystic Ovarian Syndrome Questionnaire and the Short Form-36 were used as a tool to collect data. Results of the study revealed that South Asian women with polycystic ovarian disease did not have poorer health related quality of life than their Caucasian counterparts.[19]

A randomized controlled trial was conducted to assess the effect of acupuncture and physical exercise for affective symptoms and health-related quality of life in polycystic ovarian disease .72 women with polycystic ovarian disease were taken as study sample by simple random sampling. 72 women with polycystic ovarian disease were randomly assigned to 16 weeks of 1) acupuncture; 2) exercise ; or 3) no intervention. Montgomery Åsberg Depression Rating Scale, Brief Scale for Anxiety, Swedish Short-Form 36, and PCOS Questionnaire were used as a tool to collect data. Result showed that there was a modest improvement in depression and anxiety scores in women treated with acupuncture, and improved health related quality of life scores were noted in both intervention group**.**[20]

In India nearly 40% of women are affected by polycystic ovarian disease. But among them only 60% come to hospitals for treatment, when they recognize that they have got infertility. If treated during early adolescent period it could be easily cured. Clinically the treatment of polycystic ovarian disease is challenging much more. It is common endocrine disorder affecting nearly 15% of women of reproductive age group. It is often an incidental finding in most cases, with lack of periods, infertility, unwanted facial growth and loss of hair giving signal to many parents for a check-up. The prevalence of infertility in India is between 10-20%.The worldwide incidence of infertility is 15%.In Karnataka the prevalence rate is 15-20% and in Bangalore the incidence is 10-20%.[21]

So, the researcher felt that women with polycystic ovarian disease suffered from many health problems .So, there is a need to assess the quality of life of women with polycystic ovarian disease with a view to implement lifestyle modifications in their life by providing necessary information, which helps the women to aware about the ttpolycystic ovarian disease and taking advantage of the management options available.

Statement of the problem

A descriptive study to assess the quality of life among women with polycystic ovarian disease attending gynae OPD of selected hospitals, Punjab.

Aim of the study

The aim of the study was to assess quality of life among women with polycystic ovarian disease.

Objectives

- To assess the quality of life among women with polycystic ovarian disease.
- To establish relationship of quality of life among women with polycystic ovarian disease with selected demographic variables .

- To prepare and distribute information booklet on lifestyle modifications among women with polycystic ovarian disease .

Operational definitions

Quality of life: Quality of life refers to women with diagnosed cases of polycystic ovarian disease having physical, psychological and socioeconomic problems due to PCOD as measured by modified PCOSQOL questionnaire.

Polycystic ovarian disease: It is a heterogenous disorder requires atleast two of the three following features in women seeking treatment from gynae OPD which includes anovulation, hyperandrogenism and polycystic ovaries**.**

Assumptions

- Women with polycystic ovarian disease have poor quality of life.
- There is no significant relationship between demographic variables and quality of life of women with polycystic ovarian disease.

Delimitation

The study is delimited to women with diagnosed polycystic ovarian disease attending gynae OPD of selected hospitals, Punjab**.**
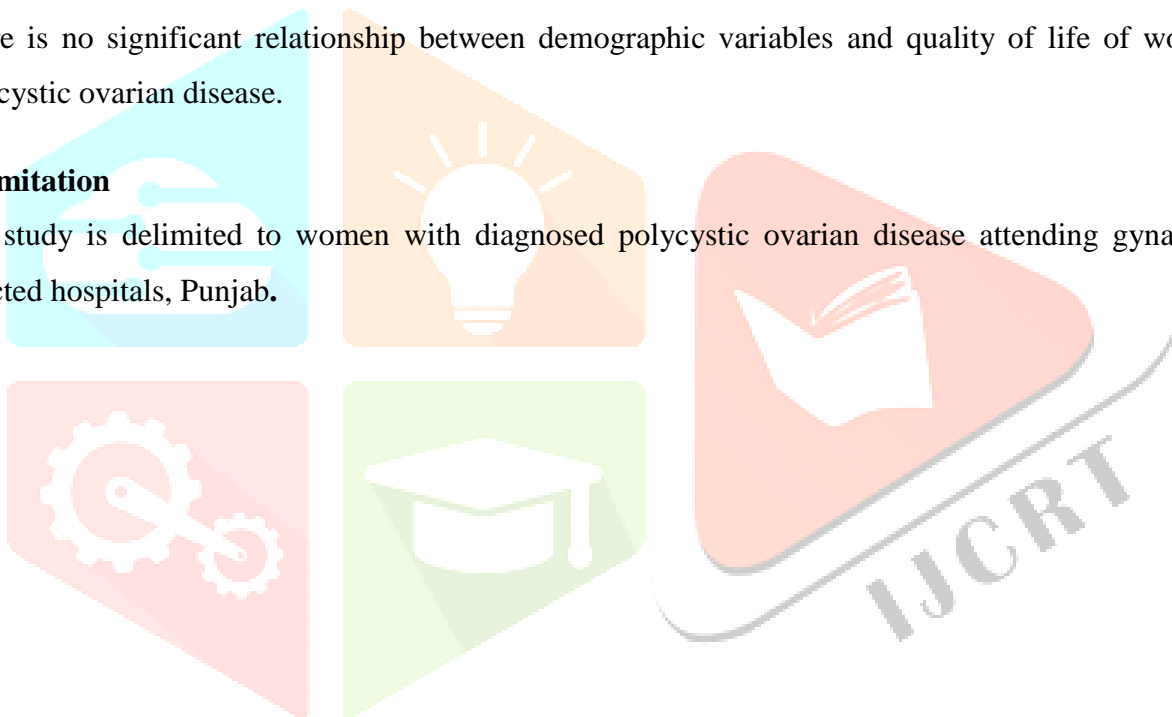
Conceptual framework

A conceptual framework model for nursing practices is a systematically constructed scientifically based and logical related set of concepts which identifies the essential components of nursing practices together

with the theoretical basis for three concepts. A conceptual model determines how the world is to be taken into account. The study aims at assessing quality of life among women with polycystic ovarian disease.

The conceptual framework adopted for this study is based on Quality of life model used in research projects carried out by quality of life research unit, was developed at the University of Toronto. The concept of quality of life using the framework was developed by Walker and Avant,1995.

The model is multidimensional and assumes that quality of life is holistic in nature.The quality of life profile was developed to provide a measure that considers both the components and determinants of health and wellbeing. The profile emphasizes individuals physical, psychological and socio-economic functioning; their connections with their environments; and opportunities for maintaining and enhancing skills.

The quality of life conceptual framework consist of demographic variables i.e. age, education, family income, dietary habits, place of residence, occupation, type of family, family history of PCOD, marital status, religion, source of information, nutritional status, waist hip ratio, interval of menstrual cycles, number of menstrual cycles, amount of menstrual flow, duration of menstrual cycle, hirsutism, acne. The women is assumed as the being having further subdomains i.e. physical being, psychological being, social being.

As a physical being,the quality of life can be affected with problems with weight management and infertility and thus depicts physical symptoms related to disease i.e. irregular menses, excessive facial hair growth ,menstrual cramps, menorrhagia.

As a psychological being,the quality of life is degraded with deterioration of psychological health of client, scared about future, frightened to get cancer ,moody, insomnia, depression , irritability.

As a social being,women with polycystic ovarian disease feel isolated in gatherings,weak family support, affected activities, hesitate to express feelings with others and financial restrictions in treatment.

Thus all these domains collaboratively effects the quality of life of women with polycystic ovarian disease as we consider that a quality environment is one which:

1. Provides for basic needs to be met(food, shelter, safety, social contact)

2. Provides for range of opportunities within the individual's potential.

3. Provides for control and choice within that environment.

By identifying areas affected in different domains guidelines can be developed regarding management of polycystic ovarian disease and counselling of women can be planned to improve quality of life of women.

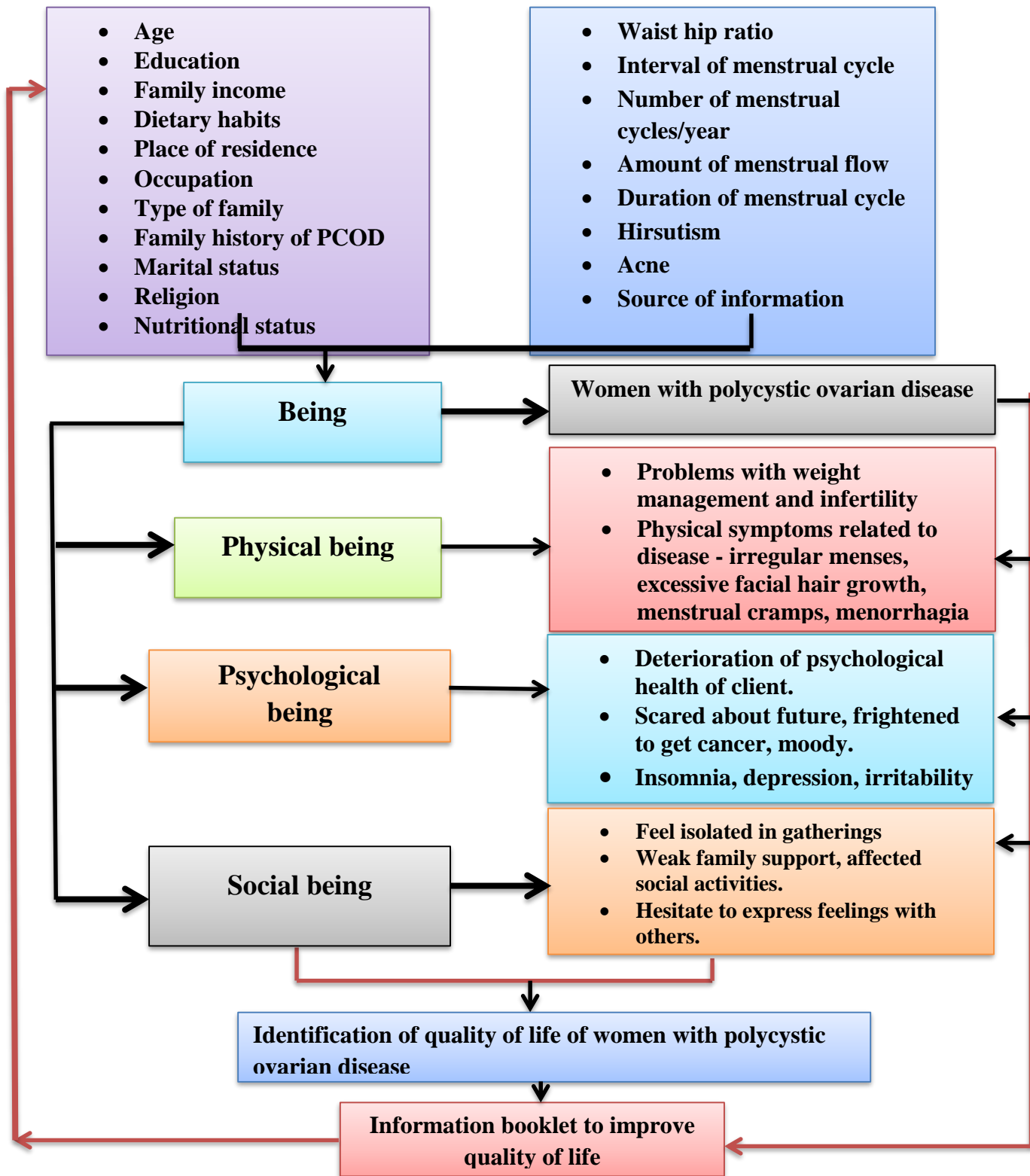Fig 1: Quality of life model by University of Toronto, Walker and Avant,1995

REVIEW OF LITERATURE

This chapter deals with the review of literature to assess the quality of life of women with polycystic ovarian disease and review of literature is as follows-

Review of literature is divided into two parts; there are literature related to:

A) Studies related to women with polycystic ovarian disease

B) Studies related to quality of life of women with polycystic ovarian disease

A) Studies related to women with polycystic ovarian disease

A comparative study was conducted to investigate the reproductive hormones levels in women with or without polycystic ovarian disease in Saudi Arabia. A total of 62 cases with polycystic ovarian disease and 40 healthy women were taken in study by simple random sampling. Physical evaluation and laboratory investigations were carried out.

Blood lutenising hormone, follicle stimulating hormone,estradiol dehydroepiandrosterone sulfate, sex hormone-binding globulin, total testosterone, prolactin, and progesterone were determined. Results showed that Serum levels of follicle stimulating hormone, sex hormone-binding globulin, and progesterone were significantly lower in polycystic ovarian disease compared to controls while luteinizing hormone /Follicle stimulating hormone and testosterone levels were higher in Polycystic ovarian disease cases than in controls.[22]

A descriptive-analytical study was conducted on the psychological distress in women with polycystic ovarian disease in Tehran. 81 women with polycystic ovarian disease were selected as study sample by convenient sampling technique. Stress symptoms of women with polycystic ovarian disease were assessed using the Understanding Yourself questionnaire. Results of this study revealed that 8 participants did not have any signs of stress, 32 had neurotic stress, 29 had high and 12 had extremely high levels of stress due to polycystic ovarian disease.[23]

A randomized clinical trial on the effect of omega-3 supplementation on androgen profile and menstrual status in women with polycystic ovarian disease.78 overweight/obese women with polycystic ovarian disease were selected in study as sample by simple random sampling. Participants were randomized to receive omega-3 (3g/day) for 8 weeks. Data about weight, height and nutrient intake as well as blood samples were collected before and after intervention. Results showed that Omega-3 supplementation could reduce serum concentrations of testosterone and regulate menstrual cycle is 47.2%.[24]

A correlational study was conducted on the relationship between clinico-biochemical characteristics and psychiatric distress in young women with polycystic ovarian disease. 42 women with polycystic ovary syndrome and 42 age-matched healthy controls were taken in study by purposive sampling. The General Health Questionnaire and Beck Depression Inventory were used. Scores of Beck Depression Inventory and General Health Questionnaire were significantly higher than control group and BMI and waist-to-hip ratio were positively correlated with the Beck Depression Inventory and General Health Questionnaire scores. Emotional distress, depressive symptoms, hirsutism score, body mass index, waist-to-hip ratio, luteinizing hormone/follicle-stimulating hormone ratio, serum total testosterone levels were significantly greater in women with Polycystic ovarian disease than in healthy women.[25]

A prospective, placebo-controlled trial was conducted on women with polycystic ovarian disease who were randomly received cinnamon supplements or placebo.45 women with polycystic ovarian disease were taken in study by simple random sampling. Cinnamon supplements or placebo were randomly given to women with polycystic ovarian disease for 6 months .Results showed that menstrual cycles were more frequent in patients taking cinnamon versus those taking placebo. Menstrual cyclicity improved from baseline in patients taking cinnamon but did not improve for women taking placebo. Ovulatory progesterone levels confirmed ovulatory menses in samples of serum taken from different patients in the cinnamon group. There was no change in either group in measures of insulin resistance or serum androgen levels.[26]

A prospective randomized trial was conducted to evaluate the efficacy of induction of ovulation with Clomiphene citrate versus Tamoxifen in a group of anovulatory subfertile women with polycystic ovarian disease. 371 women with polycystic ovarian disease were taken in study by simple random sampling .Women with polycystic ovarian disease was randomly allocated into two treatment groups: group A (187 women) who received Clomiphene citrate and group B (184 women) who received Tamoxifen for one treatment cycle. Result showed that Clomiphene citrate is more successful than tamoxifen as a first line therapy for ovulation induction in women with polycystic ovarian disease.[27]

A prospective study was conducted on the effects of exercise on insulin resistance and body composition in overweight and obese women with and without polycystic ovarian disease. 20 overweight women with polycystic ovarian disease and 14 overweight non-polycystic ovarian disease women were selected in study by purposive sampling. 12 week of intensified aerobic exercise (3 hrs/week) given to both women with or without polycystic ovarian disease .Results showed that with exercise women with polycystic ovarian disease had more Insulin resistence in women with polycystic ovarian disease but had more visceral fat in both women with or without Polycystic ovarian disease.[28]

B) Studies related to quality of life of women with polycystic ovarian disease.

A cross-sectional study was conducted to evaluate the influence of obesity, fertility status, and androgenism scores on health-related quality of life in women with polycystic ovarian disease in United States. 128 women with polycystic ovarian disease, half of whom were attempting to conceive in addition to being treated for polycystic ovarian disease were selected in study by convenient sampling. The Health-Related Quality of Life Questionnaire was used. The result showed that most common health-related quality of life concern reported by women with polycystic ovarian disease was weight, followed in descending order by menstrual problems, infertility, emotions, and body hair.[29]

A meta-analysis was conducted on the association of polycystic ovarian disease with negatively variable impacts on domains of health-related quality of life. 423 women with polycystic ovarian disease and 285 healthy controls were taken in study as sample convenient sampling technique. Short Form 36 questionnaire were used to check association of women with polycystic ovarian disease with domains of

quality of life. Results of the study revealed that compared with controls, women with polycystic ovarian disease had lower scores in all Short Form-36 questionnaire.[30]

A prospective study was done to assess the impact of adding exercise to dietary restriction on depressive symptoms and health-related quality of life in women with polycystic ovarian disease in clinical research unit. 104 overweight/obese women with polycystic ovarian disease were taken in study by purposive sampling. Randomly one of the three 20-week lifestyle programs: diet only, diet and aerobic exercise, or diet and combined aerobic-resistance exercises were given to women with polycystic ovarian disease. Results showed that by week 20 all women achieved weight loss and had improvements in depression symptoms and polycystic ovarian disease-specific quality of life scores. There was no difference between treatments for all outcomes.[31]

A correlational study was done to assess how polycystic ovarian disease influences quality of life and changes in body image. 121 women with polycystic ovarian disease were taken in study by purposive sampling. Illness Intrusiveness Ratings Scale, Health-Related-Quality-of-Life Questionnaire for Women with Polycystic Ovarian Syndrome and their own body image questionnaire were used. Results showed that there was a negative correlation between illness intrusiveness and quality of life and a positive correlation between body image and quality of life. A significant difference was observed in body satisfaction between patients who had visible body changes and those who had metabolic disturbances. Overweight patients who lost weight with lifestyle changes had significantly better quality of life.[32]

A cross-sectional study was conducted to determine the most significant predictors of the health related quality of life in women with polycystic ovarian disease. 300 women with polycystic ovarian disease were taken in study by consecutive sampling. Hospital Anxiety and Depression Scale, Body Image Concern Inventory , the Rosenberg's Self-Esteem Scale, modified polycystic ovarian disease health-related quality of life questionnaire were used. Results showed highest effect on health related quality of life was exerted by indirect effect of self-esteem, body image and sexual function that influenced negatively health related quality of life. The infertility and menstrual domains were most affected areas of health related quality of life.[33]

A meta-analysis was done to assess the impact of polycystic ovarian disease on specific health related quality of life domains.Total 420 women were selected as sample by purposive sampling ,out of which 210 women had polycystic ovarian disease and 210 women were healthy controls.SF-36 questionnaire was used for meta-analysis which evaluated dimensions i.e. physical role function, body pain,general health, vitality, social function,emotional role function and mental health.Results showed that compared with controls,women with polycystic ovarian disease had lower scores in all SF-36 dimensions.[34]

METHODOLOGY

Research approach

A quantitative research approach was used for present study, as it is aimed to assess the quality of life among women with polycystic ovarian disease.

Research design

A non-experimental descriptive research design was considered appropriate to conduct the research project to assess the quality of life among women with polycystic ovarian disease to accomplish stated objectives.

Research setting

The study was conducted at gynae OPD of Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur, Punjab. The selection of the hospital was done on the basis of accessibility to the setting and availability of the sample.

Variables of the study

Independent variables

The independent variables in the study were age, education, family income,dietary habits,place of residence,occupation,type of family, family history of PCOD, religion, marital status, source of information, nutritional status, waist hip ratio,interval of menstrual cycle, number of menstrual cycles,amount of menstrual flow,duration of menstrual cycle ,hirsutism and acne.

Dependent variables

Dependent variable in the study was quality of life among women with polycystic ovarian disease.

Target population

The target population was women with polycystic ovarian disease attending gynae OPD of selected hospitals, Punjab.

Sample and sampling technique

The sample of the study consisted of 100 women with diagnosed polycystic ovarian disease and selection was done on the basis of non-probability purposive sampling technique from Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur,Punjab.

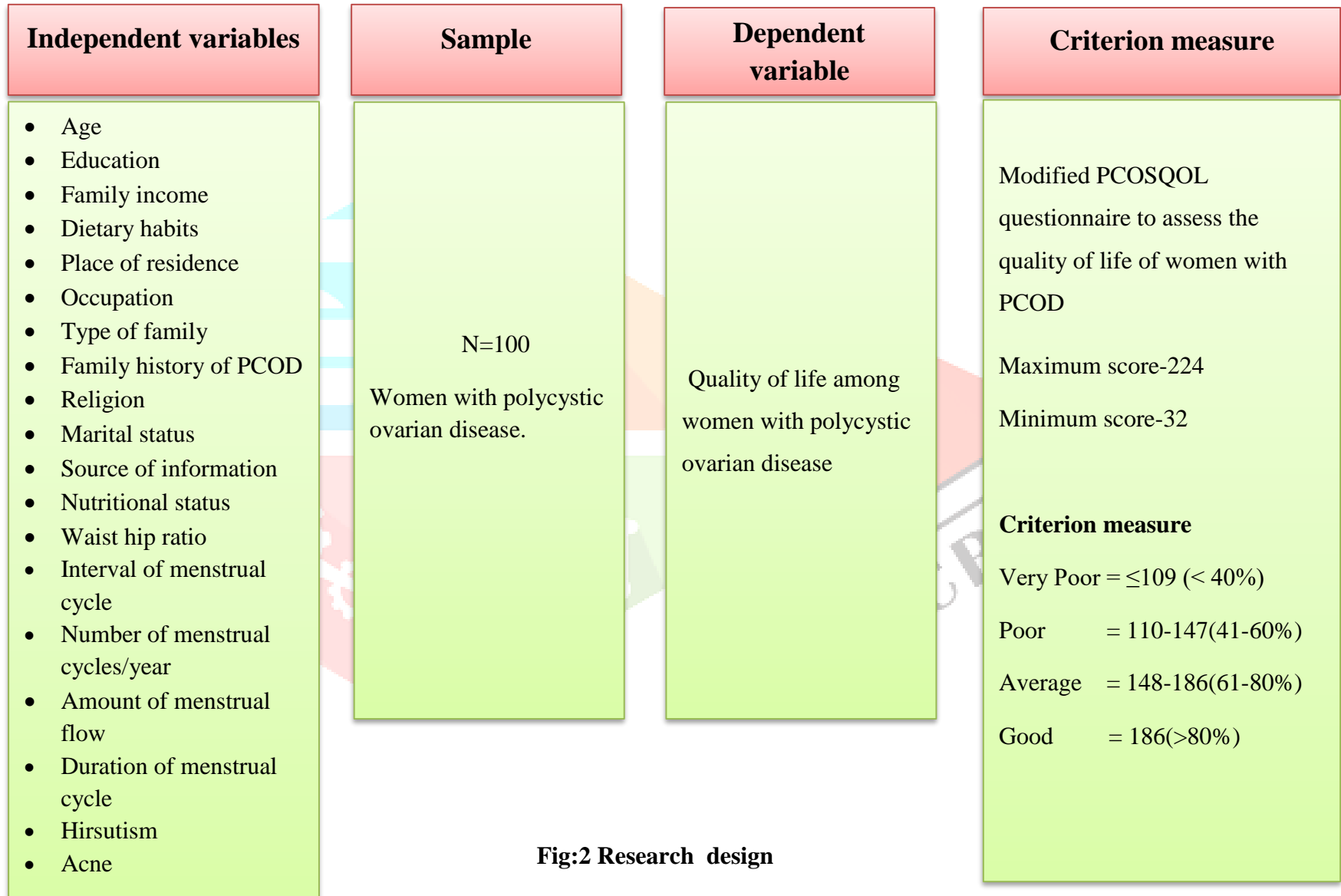| Independent variables	Sample	Dependent variable	Criterion measure
• Age • Education • Family income • Dietary habits • Place of residence • Occupation • Type of family • Family history of PCOD • Religion • Marital status • Source of information • Nutritional status • Waist hip ratio • Interval of menstrual cycle • Number of menstrual cycles/year • Amount of menstrual flow • Duration of menstrual cycle • Hirsutism • Acne	N=100 Women with polycystic ovarian disease.	Quality of life among women with polycystic ovarian disease	Modified PCOSQOL questionnaire to assess the quality of life of women with PCOD Maximum score-224 Minimum score-32 **Criterion measure** Very Poor = ≤109 (< 40%) Poor = 110-147(41-60%) Average = 148-186(61-80%) Good = 186(>80%)

Fig:2 Research design

Criteria for sample selection

Inclusion criteria

- Women with diagnosed case of polycystic ovarian disease between the age of 18-41 years.

- Women with polycystic ovarian disease attending gynae OPD of Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur, Punjab.

Exclusion criteria

Women with polycystic ovarian disease:

- having any medical/hormonal problem.

- who were not willing to participate in the study.

Development and description of tool

The study was concerned to assess the quality of life among women with polycystic ovarian disease. The tool was selected and it was developed on the basis of extensive review of literature, exploring internet, researcher's observation in the clinical area and with the help of the experts the tool was having the following sections:

Section A

It comprised of 19 items for obtaining personal information of the women with polycystic ovarian disease i.e. age, education, family income ,dietary habits , place of residence, occupation, type of family, family history of PCOD, religion , marital status, source of information , nutritional status, waist hip ratio, interval of menstrual cycle, number of menstrual cycles/year, amount of menstrual flow, duration of menstrual cycle, hirsutism and acne.

Section B

It consisted of modified PCOSQOL questionnaire to assess the quality of life in women with polycystic ovarian disease. It consisted of 3 domains i.e. physical aspects, psychological aspects and socio-economic aspects which comprises of 32 items.

Criterion measures

Quality of life	Scores
Very Poor	≤109
Poor	110-147
Average	148-186
Good	>186

Maximum score-224
Minimum score-32

Validity of tool

The content validity of the tool was determined by the experts in the field of Obstetric and Gynaecological nursing, Pediatric nursing, Medical Surgical nursing, Psychiatric nursing and Community health nursing. Tool was also validated from the Obstetrician and Gynecologist. As per guidance and suggestions of experts, needed amendments were made in the tool.

Try out

A try out of the tool was done for the clarity, relevance and feasibility for conducting the study. Permission was taken from the respective hospitals,Hoshiarpur. Purpose of the study was explained to women with polycystic ovarian disease attending gynae OPD of Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur. Verbal consent was taken from the sample. The researcher had administered modified PCOSQOL questionnaire to assess quality of life among women with polycystic ovarian disease. The tool was filled by 10 women. According to the feedback given by respondents, tool was modified as some items were not clear to them.

Pilot study

The pilot study was conducted in January 2015 at Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur to ensure reliability of tool, feasibility and practicability of study ,to ensure the appropriateness of methods and procedure of data collection, to estimate the actual time and potential problems researcher may encounter during the actual large research study. Permission from the authorities was obtained from the authority of Gurcharan Kanwal hospital and Civil hospital, Hoshiarpur for the conduction of the pilot study. Non-probability purposive sampling technique was used to select the sample for study. Written consent was taken from the respondents of study. Purpose of study was explained to the respondents. 1/10th of the total sample size i.e. 10 women were selected for pilot study. The tool was given to the women after giving necessary instructions. It took 5-7 minutes to complete the tool. The respondents were assured that their responses would be kept confidential and used for research purpose only by keeping the ethical consideration in mind.

Reliability of tool

The reliability of tool was computed by using split half method using Karl Pearson's coefficient of correlation. The reliability of questionnaire was found 0.9. Hence tool was highly reliable.

Data collection procedure

A formal permission was obtained from SMO of Civil hospital and Dr Kanwaljit Kaur, Gurcharan Kanwal Hospital after discussing the purpose and objectives of the study. The data was collected in January 2015 and February 2015. Non-probability purposive sampling technique was used to collect the data. Sample size was 100 women with polycystic ovarian disease. Comfortable environment was provided to collect data. The researcher introduced herself to the respondent and explained about the nature and importance of study, after taking written informed consent from sample for participation in the study, data was collected. The tool was given to women with polycystic ovarian disease after giving necessary instructions. It took 5-7 minutes to complete the tool. The respondents were assured that their responses would be kept confidential and will be used for research purpose only by keeping the ethical considerations in mind. The collected data was then organized for analysis.

Difficulties faced by the researcher

It was found difficult by the researcher to motivate the women with polycystic ovarian disease who came for checkup from gynae OPD, to share their time for providing responses to the researcher's questions for the research study because sometimes they were in hurry.

Ethical considerations

- Permission from institutional research approval committee will be obtained.
- A written letter seeking permission to conduct the study was obtained from SMO of Civil hospital and director of Gurcharan Kanwal hospital, Hoshiarpur.
- The purpose of study was explained to respondents and written informed consent was taken from them for their participation in the study.
- Confidentiality of sample was maintained.

Plan of data analysis

Analysis of data was done in accordance with objectives of study. The data analysis was done by using the descriptive and inferential statistics, by calculating the frequency,

percentage, mean, standard deviation, chi square test, t-test and ANOVA test. Tables, figures were used to present significant findings.

ANALYSIS AND INTERPRETATION OF DATA

SECTION-A

TABLE-1

Frequency and percentage distribution of women with polycystic ovarian disease as per selected demographic variables.

N=100

Demographic variables	n (%)
Age(in years)	
18-25	22
26-33	46
34-41	32
Education	
Illiterate	21
Matric	42
Senior secondary	31
Graduate and above	6
Family income(`/month)	
≤10000	34
10001-20000	44
>20000	22
Dietary Habits	
Vegetarian	38
Eggetarian	26
Non-vegetarian	36
Place of residence	
Urban	42
Rural	58

Occupation

Working	37
Non-working	63

Type of family

Nuclear	20
Joint	45
Extended	35

Family history of PCOD

Yes	34
No	66

Religion

Hindu	30
Sikh	50
Others	20

Marital status

Unmarried	49
Married	51

Source of information

Electronic media	15
Peer group	15
Print media	14
Health personnel	56

Nutritional status(as per BMI)

Underweight	0
Normal	18
Overweight	43
Obese	39

Waist hip ratio(WHO)

Low	0
Normal	18

High	82

Interval of menstrual cycle(in days)

<21	0
21-34	54
35-60	36
>60	9

No. of menstrual cycles(per year)

6-8	69
8-10	22
>10	9

Amount of menstrual flow(number of pads used/day)

<2	2
2-4	15
4-6	53
>6	30

Duration of menstrual cycle(in days)

<4	32
4-6	55
>6	13

Hirsutism

Normal	58
Mild	35
Moderate	7
Severe	0

Acne

None	37
Mild	48

Moderate	15
Severe	0

Table-1depicts that, according to age, 46% of women were from 26-33years followed by 32% were 34-41years and least i.e.22% were 18-25years.

According to education, 42% of women were educated upto matric followed by 31% were senior secondary and 21% were illiterate and least i.e.6% were graduate and above.

According to family income, 44% of women had 10001-20000 followed by 34% had ≤10000 and least i.e. 22% had >20000.

According to dietary habits, 38% of women were vegetarian followed by 36% were non-vegetarian and least i.e. 26% were eggetarian.

According to place of residence, more than half of women i.e. 58% were residing in rural area and least i.e.42% were residing in urban area.

According to occupation, more than half of women i.e.63% were non-working and least i.e. 37% were working.

According to type of family, 45% of women were from joint family followed by 35% from extended family and least i.e. 20% from nuclear family.

According to family history of PCOD, more than half of women i.e.66% had no family history of PCOD and least i.e. 34% had family history of PCOD.

According to religion, half of women i.e.50% were Sikh followed by 30% were Hindu and least i.e. 20% were from other category of religion.

According to marital status, half of women i.e. 51% were married and 49% were unmarried.

According to source of information, more than half of women i.e.56% obtained information from health personnel followed by 15% from electronic media and peer group and least i.e. 14% from print media.

According to nutritional status, 43% of women were overweight followed by 39% obese and least i.e.18% had normal nutritional status.

According to waist hip ratio, majority of women i.e. 82% had high waist hip ratio and least i.e.18% had normal waist hip ratio.

According to interval of menstrual cycle, more than half of women i.e.55% had 21-34 days followed by 36% had 35-60 days and least i.e.9% had >60 days interval of menstrual cycle.

According to number of menstrual cycles, 69% had 6-8 menstrual cycles followed by 22% had 8-10 menstrual cycles and least i.e.9% had >10 menstrual cycles.

According to amount of menstrual flow, more than half of women i.e. 53% used 4-6 pads followed by 30% used >6 pads and least i.e.15% used 2-4 pads.

According to duration of menstrual cycle, more than half of women i.e.55% had 4-6 days followed by 32% had <4 days and least i.e. 13% had 6-8 days in each menstrual cycle.

According to hirsutism, more than half of women i.e.58% were normal followed by 35% had mild hirsutism and least i.e. 7% had moderate hirsutism.

According to acne, 48% of women had mild acne followed by 37% were normal and least i.e. 15% had moderate acne.

Hence, it was concluded that 46% women were from age group 26-33 years and least i.e.22% were from 18-25 years.42% women were educated upto matric and least i.e.21% were illiterate.44% women belonged to family income 10001-20000 and least i.e.22% belonged to >20000. 38% of women were vegetarian and least i.e.26% were eggetarian. More than half of women i.e.58% women were residing in rural area and least i.e.42% were residing in urban area. More than half of women i.e.63% were non-working and least i.e.37% were working. 45% of the women were from joint family and least i.e.20% were from nuclear family. More than half of women i.e.66% had no family history of PCOD and least i.e.34% had family history of PCOD. Half of women i.e.50% were Sikh and least i.e.20% were from other category of religion. More than half of women i.e.51% were married and 49% were unmarried. More than half of women i.e.56% got information from health personnel and least i.e.14% from print media.43% of women were overweight and least i.e.18% had normal nutritional status. Majority of women i.e.82% had high waist hip ratio and least i.e.18% had normal waist hip ratio. More than half of women i.e.55% had 21-34 days interval of menstrual cycle and least i.e. 9% had >60 days of menstrual cycle. 69% had 6-8 menstrual cycles and least i.e.9% had >10 menstrual cycles. More than half of women i.e.53% used 4-6 pads and least i.e.15% used 2-4 pads. More than half of women i.e.55% had 4-6 days duration of menstrual cycle and least i.e. 13% had 6-8 days of duration of menstrual cycle. More than half of women i.e.58% were normal and least i.e.7% had moderate hirsutism. 48% had mild acne and least i.e.15% had moderate acne.

Objective-1 To assess the quality of life among women with polycystic ovarian disease.

Table-2(a)

Frequency and percentage distribution of women with polycystic ovarian disease according to quality of life.

N=100

Quality of life(QOL)	Criterion measure	n (%)
Very Poor	≤109 (≤ 40%)	0
Poor	110-147 (41-60%)	82
Average	148-186 (61-80%)	18
Good	>186 (>80%)	0

Maximum score-224

Minimum score-32

Table 2(a) depicts that majority of women i.e.82% had poor quality of life followed by 18% had average quality of life.

Hence, it was concluded that majority of women with polycystic ovarian disease had poor quality of life.

Table-2(b)

Frequency and percentage distribution of women with polycystic ovarian disease according to domains of quality of life.

N=100

Quality of life	Physical aspects n(%)	Psychological aspects n(%)	Socio-economical aspects n(%)
Very Poor	0	0	0
Poor	80	44	24
Average	20	43	66
Good	0	13	10

	Maximum Score	Minimum Score
Physical aspects	91	13
Psychological aspects	70	10
Socio-economic aspects	63	9

Table 2(b) depicts that as per physical aspect, 80% women had poor status and 20% had average status. As per psychological aspects, 44% had poor status, 43% had average status and 13% had good status. As per socio-economic aspect, 24% had poor status, 66% had average status, 10% had good status.

Hence, it was concluded that majority of women had poor physical and psychological status and average socio-economical status.

Objective 2-To establish relationship of quality of life among women with polycystic ovarian disease with selected demographic variables.

Table-3(a)

Relationship of quality of life among women with polycystic ovarian disease with selected demographic variables

N=100

Demographic variables	n	Mean	SD	df	Test value
Age(in years)					

18-25	22	123.09	13.582		
26-33	46	122.11	13.570	2,97	F=1.840[NS]
34-41	32	117.06	12.337		

Education

Illiterate	21	123.62	12.627		
Upto matric	42	116.90	11.830	3,96	F=4.759[NS]
Senior secondary	31	125.90	13.862		
Graduate or above	6	110.33	10.577		

Family

income(ˋ/month)

≤10000	34	120.38	13.173		
10001-20000	44	118.59	12.663	2,97	F=2.008[NS]
>20000	22	125.45	14.145		

Dietary Habits

Vegetarian	38	117.84	12.682		
Eggetarian	26	123.35	13.876	2,97	F=1.539[NS]
Non-vegetarian	36	121.83	3.326		

Place of residence

Urban	42	121.21	13.426	1,98	t=0.321[NS]
Rural	58	120.34	13.317		

Occupation

Working	37	122.35	11.748	1,98	t=0.945[NS]
Non-working	63	119.75	14.138		

Family history of PCOD

Yes	34	121.53	14.26	1,98	t=0.440[NS]
No	66	120.29	12.86		

Type of Family

Nuclear	20	115.35	14.605		
Joint	45	120.40	12.074	2,97	F=2.931^{NS}
Extended	35	124.17	13.343		

Religion

Hindu	30	115.35	14.605		
Sikh	50	120.40	12.074	2,97	F=2.931^{NS}
Others	20	124.17	13.343		

Marital status

Unmarried	49	119.88	14.91	1,98	t=0.611^{NS}
Married	51	121.15	11.63		

Source of information

Electronic media	15	123.20	10.496	3,96	F=1.796^{NS}
Peer group	15	121.20	12.70		
Print media	14	126.86	14.63		
Health personnel	56	118.38	13.48		

Nutritional status(as per BMI)

Normal	18	115.35	14.605	2,97	F=0.640^{NS}
Obese	43	120.29	12.074		
Overweight	39	124.17	13.343		

Waist hip ratio

Normal	18	118.67	12.25	1,98	F=0.515^{NS}
High	82	121.16	13.55		

Interval of menstrual cycle(in days)

21-34	55	118.91	12.71	2,97	F=4.947[NS]
35-60	36	126.19	13.35		
>60	9	107.00	1		

No. of menstrual cycles(per year)

6-8	69	121.83	13.71	2,97	F=2.390[NS]
8-10	22	120.91	12.95		
>10	9	111.67	6.91		

Amount of menstrual flow(number of pads used/day)

<2	2	112	19.79	3,96	F=2.337[NS]
2-4	15	119.40	12.70		
4-6	53	118.55	12.85		
>6	30	125.77	13.23		

Duration of menstrual cycle (in days)

<4	32	124.00	14.04	2,97	F=1.901[NS]
4-6	55	118.44	12.14		
>6	13	122.23	15.21		

Hirsutism

Normal	58	120.28	13.59	2,97	F=2.227[NS]
Mild	35	119.43	10.94		
Moderate	7	130.71	18.88		

Acne

None	37	121.08	12.77		
Mild	48	121.08	13.47	2,97	F=0.218[NS]
Moderate	15	118.60	14.71		

NS=Non-significant

Table 3(a) depicts that according to age, mean quality of life score was highest i.e. 123.09 in the age group 18-25 followed by 122.11 among 26-33 years and least i.e.117.06 among 34-41 years. The relationship between quality of life and age was found to be statistically non-significant.

According to education, mean quality of life score was highest i.e.125.90 in women who were senior secondary, followed by123.62 were illiterate, 116.90 were upto matric and least i.e. 110.33 in the women were graduate and above. The relationship between quality of life and education was statistically non-significant.

According to family income, the mean quality of life score was highest i.e. 125.45 had >20000, followed by 120.38 had ≤10000 and least i.e. 118.59 had 10001-20000. The relationship between quality of life and family income was statistically non-significant.

According to dietary habits, the mean quality of life score was highest i.e. 123.35 in the women who were eggetarian followed by 121.83 were non-vegetarian and least i.e. 117.84 were vegetarian. The relationship between quality of life and dietary habits was statistically non-significant.

According to place of residence, the mean quality of life score was highest i.e. 121.21 from urban area and least i.e.120.34 from rural area. The relationship between quality of life and place of residence was statistically non-significant.

According to occupation, the mean quality of life score was highest i.e. 122.35 in the women who were working and least i.e. 119.75 were non-working. The relationship between quality of life and occupation was statistically non-significant.

According to type of family, the mean quality of life score was highest i.e. 124.17 from extended family, followed by 120.40 from joint family and least i.e. 115.35 from nuclear family. The relationship between quality of life and type of family was statistically non-significant.

According to family history of PCOD, the mean quality of life score was highest ie 121.53 who had family history of PCOD and least i.e. 120.29 had no family history of PCOD. The relationship between quality of life and family history of PCOD was statistically non-significant.

According to religion, the mean quality of life score was highest i.e. 124.17 from other category of religion, followed by 120.40 were Sikh and least i.e.115.35 were Hindu. The relationship between quality of life and religion was statistically non- significant.

According to marital status, the mean quality of life score was highest i.e. 121.15 who were married and least i.e. 119.88 in the women were unmarried. The relationship between quality of life and marital status was statistically non-significant.

According to source of information, the mean quality of life score was highest i.e.126.86 who obtained information from print media, followed by 123.20 from electronic media, 121.20 from peer

group and least i.e. 118.38 from health personnel. The relationship between quality of life and source of information was statistically non-significant.

According to nutritional status, the mean quality of life score was highest i.e.124.17 among obese, followed by 120.29 overweight and least i.e. 115.35 had normal nutritional status. The relationship between quality of life and nutritional status was statistically non-significant.

According to waist hip ratio, the mean quality of life score was highest i.e.121.16 who had high waist hip ratio and least i.e. 118.67 had normal waist hip ratio. The relationship between quality of life and waist hip ratio was statistically non- significant.

According to interval of menstrual cycle, the mean quality of life score was highest i.e. 126.19 of menstrual cycle 35-60 days, followed by 118.91 in 21-34 days and least i.e. 107.00 had menstrual cycle >60 days. The relationship between quality of life and interval of menstrual cycle was statistically non-significant.

According to number of menstrual cycles, the mean quality of life score was highest i.e. 121.83 in women had 6-8 menstrual cycles, followed by 120.91 had 8-10 menstrual cycles and least i.e. 111.67 had >10 menstrual cycles. The relationship between quality of life and number of menstrual cycles was statistically non-significant.

According to amount of menstrual flow, the mean quality of life score was highest i.e. 125.77 used >6 pads, followed by 119.40 used 2-4 pads, 118.55 used 4-6 pads and least i.e. 112 used 2 pads. The relationship between quality of life and amount of menstrual flow was statistically non-significant.

According to duration of menstrual cycle, the mean quality of life score was highest i.e. 124.00 who had <4 days followed by 122.23 had <6 days and least i.e. 118.44 had 4-6 days. The relationship between quality of life and duration of menstrual cycle was statistically non-significant.

According to hirsutism, the mean quality of life score was highest i.e. 130.71 who had moderate hirsutism, followed by 120.28 who had no hirsutism and least i.e. 119.43 who had mild hirsutism. The relationship between quality of life and hirsutism was statistically non-significant.

According to acne, the mean quality of life score was highest i.e. 121.08 who had mild acne, followed by 121.08 had no acne and least i.e. 118.60 had moderate acne. The relationship between quality of life and acne was statistically non- significant.

Hence, it was inferred that age,education,family income, occupation ,place of residence, type of family, dietary habits, religion, marital status, source of information, nutritional status,waist hip ratio,interval of menstrual cycle, number of menstrual cycles,amount of menstrual flow,duration of menstrual cycle, hirsutism and acne had no impact on quality of life.

Objective2-To find out relationship of quality of life among women with polycystic ovarian disease with selected demographic variables.

Table-3(b)

Relationship of various domains of quality of life among women with polycystic ovarian disease with selected demographic variables.

N=100

Demographic Variables	n	df	Physical aspects Mean±SD	test value	Psychological aspects Mean±SD	test value	Socioeconomical aspects Mean±SD	test value

Age(in years)								
18-25	21	2,97	52.95±9.06	F=	46.85±10.23	F=	43.14±8.03	F=
26-33	46		49.15±9.07	2.034^{NS}	45.02±7.34	0.39^{NS}	43.30±6.32	0.73^{NS}
34-41	33		48.33±7.37		45.48±6.65		41.53±6.03	

Education								
Illiterate	21	3,96	49.71±9.50	F=	44.19±9.46	F=	42.85±7.55	F=
Upto matric	42		50.23±9.22	1.76^{NS}	47±7.60	0.98^{NS}	42.90±6.10	0.20^{NS}
Senior secondary	31		47.22±6.88		44.61±6.75		44.58±5.05	
Graduate or above	6		55.33±7.99		43.50±7.60		44.80±6.45	

Family income (`/month)								
≤10000	34	2,97	50.23±8.68		46.20±7.36		41.64±5.99	
10001-20000	44		49.06±9.30	F=	45.79±7.93	F=	43.84±6.96	F=
>20000	22		49.22±7.48	0.18^{NS}	43.54±7.86	0.87^{NS}	42.09±7.89	1.09^{NS}

Dietary Habits								
Vegetarian	38	2,97	49.05±9.41	F=	46.71±8.06	F=	41.89±6.70	F=
Eggetarian	26		49.42±9.20	0.05^{NS}	45.92±6.63	1.61^{NS}	44.76±5.67	2.02^{NS}
Non-vegetarian	36		49.75±7.68		43.58±8.00		41.55±7.24	

Place of residence								
Urban	42	1,98	48.50±7.62	t=	44.19±6.90	t=	42.28±6.55	t=
Rural	58		50.27±9.34	1.01^{NS}	46.31±8.25	1.35^{NS}	42.81±6.85	0.38^{NS}

Occupation								
Working	37	1,98	50.29±8.84	t=	46.67±6.85	t=	42.78±5.96	t=0.23
Non-working	63		49.03±8.58	0.70^{NS}	44.52±8.14	1.34^{NS}	42.46±7.15	^{NS}

Type of Family								
Nuclear	20	2,97	49.15±8.07	F=	46.30±6.57	F=	43.25±5.27	F=
Joint	45		49.82±8.68	0.04^{NS}	42.97±7.77	4.73^{NS}	41±7.03	2.47^{NS}

	N	df						
Extended	35		49.50±9.20		48.08±7.63		44.22±6.71	
Family history of PCOD								
Yes	34	1,98	50.97±10.3	t=	47.29±8.22	t=	44.85±6.02	t=
No	66		48.74±7.65	1.22[NS]	44.45±7.37	1.75[NS]	41.40±6.78	2.49[NS]
Religion								
Hindu	30	2,97	46.10±6.37	F=	45.73±5.14	F=	44.13±5.08	F=
Sikh	50		50.26±9.35	4.11[NS]	44.98±8.08	0.22[NS]	40.68±7.12	4.39[NS]
Others	20		52.70±8.49		46.30±10.11		45±6.68	
Marital status								
Unmarried	49	1,98	49.28±8.87	t=	44.48±7.81	t=	42.89±6.34	t=
Married	51		49.70±8.53	0.24[NS]	46.31±7.66	1.17[NS]	42.27±7.08	0.46[NS]
Source of information								
Electronic media	**15**	**3,96**	**49.86±9.09**	**F= 0.80[NS]**	**47.33±6.61**	**F= 1.48[NS]**	**43.53±6.47**	**F= 0.66[NS]**
Peer group	**15**		**51.13±8.74**		**47.13±7.30**		**44.40±6.64**	
Print media	**14**		**46.35±5.93**		**42±8.04**		**41.57±7.90**	
Health personnel	**56**		**49.76±9.18**		**45.30±7.95**		**42.08±6.52**	
Nutritional status(as per BMI)								
Normal	18	2,97	47.55±5.72	F=	41.16±6.35	F=	40.38±6.59	F=
Overweight	43		50.13±8.67	0.57[NS]	45.18±6.89	4.64[NS]	43.02±6.32	1.14[NS]
Obese	39		49.69±9.75		47.64±8.50		43.05±7.21	
Waist hip ratio(WHO)								
Normal	18	1,98	47.61±5.81	t=	41.16±6.35	t=	40.38±6.59	t=
High	82		49.63±8.99	0.91[NS]	46.35±7.74	2.64[NS]	43.06±6.67	1.54[NS]
Interval of								

menstrual cycle(in days)								
21-34	55	2,97	49.48±8.91	F=	43.89±8.13	F=	41.98±6.58	F=
35-60	36		49.88±8.48	1.29[NS]	46.67±7.99	1.77[NS]	43.36±6.63	0.48[NS]
>60	9		44.88±5.73		41.3±16.37		43.11±8.11	
No. of menstrual cycles(per year)								
6-8	**69**	**2,97**	**51.23±9.37**	**F=**	**46.26±8.63**	**F=**	**42.59±6.99**	**F=**
8-10	**22**		**45.95±4.92**	**4.85[NS]**	**43.18±4.70**	**1.40[NS]**	**42.50±5.64**	**0.002[NS]**
>10	**9**		**44.88±5.73**		**44.44±5.59**		**42.66±7.53**	
Amount of menstrual flow(no. of pads used/day)								
<2	2	3,96	47.50±6.36	F=	37±4.24	F=	32±2.82	F=
2-4	15		55.66±11.5	3.21[NS]	48.86±10.43	3.04[NS]	45.73±6.67	5.34[NS]
4-6	53		48.27±7.99		43.88±7.17		40.94±6.70	
>6	30		48.83±7.05		46.96±6.46		44.60±5.41	
Duration of menstrual cycle(in days)								
<4	32	2,97	50.46±10.6	F=	47.28±8.69	F=	43.34±7.00	F=
4-6	55		48.54±7.53	0.76[NS]	43.83±6.99	2.64[NS]	41.83±6.80	0.77[NS]
>6	13		51.15±7.71		47.53±7.37		43.84±5.49	
Hirsutism								
Normal	58	2,97	50.87±9.99	F=	46.60±7.93	F=	44.03±6.69	F=
Mild	35		48.57±5.40	2.39[NS]	44.02±6.96	1.73[NS]	40.25±6.47	3.66[NS]
Moderate	7		44±8.46		42.57±9.14		42.14±5.08	

Acne

None	37	2,97	48.86±9.79	F=	46.97±7.47	F=	42.27±6.18	F=
Mild	48		49.39±8.43	8.49^{NS}	37±0	3.65^{NS}	43.91±6.75	3.18^{NS}
Moderate	15		39±6.86		44.4±8.05		39.06±6.86	

NS= Non-significant

	Maximum score	Minimum score
Physical aspects	91	13
Psychological aspects	70	10
Socioeconomic aspects	63	9

Table3(b)presents the relationship of all the three domains of QOL i.e. physical, psychological and socioeconomic aspects with selected variables. Thus, here it depicts that women from age group 18-25 had high mean score i.e. 52.95, 46.85, 43.14 in all three domains of quality of life as compared to women belonging to other groups ie 26-33 yrs and 34-41 yrs. It means that women from age group 18-25 had poor quality of life in all three aspects according to mean score value. Thus, it depicts that there is no relationship between the domains of QOL with age as the difference between the mean score of all aspects was statistically non-significant.

The women who were educated upto matric had high mean score i.e. 50.23, 47 in physical and psychological aspects whereas women who were graduate and above had highest mean score i.e. 44.80 in socioeconomic aspects. The difference between the mean score of all aspects were statistically non-significant.

The women with family income ≤10000 had higher mean score ie 50.23, 46.20 in physical and psychological aspects as compared to women with family income 10001-20000 had high mean score i.e. 43.84 in socioeconomic aspect and the difference between the mean score of all aspects were statistically non-significant .

The women who were non-vegetarian had high mean score ie 49.75 in physical aspects as compared to women who were vegetarian had high mean score i.e. 46.71 in psychological aspects as compared to women who were eggetarian had high mean score i.e. 44.76 in socioeconomic aspects. The difference between the mean score of all aspects were statistically non-significant.

The women residing in urban area had high mean score i.e. 50.27, 46.31, 42.81 in all three aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who were working had high mean score i.e. 50.29, 46.67, 42.78 in all three aspects of QOL .The difference between the mean score of all aspects were statistically non-significant.

The women residing in joint family had high mean score i.e. 49.82 in physical aspects .The women residing in extended family have high mean score i.e. 48.08, 44.22 in psychological and socioeconomic aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who had family history of PCOD had high mean score i.e. 50.97, 47.29, 44.85 in all three aspects of QOL .The difference between the mean score of all aspects were statistically non-significant.

The women who belonged to other category of religion had high mean score i.e.52.70, 46.30, 45 in all three aspects of QOL.The difference between the mean score of all aspects were statistically non-significant.

Married women had high mean score i.e.49.70, 46.31 in physical and psychological aspects. Unmarried women had high mean score i.e.42.89 in socio-economical aspects.The difference between the mean score of all aspects were statistically non-significant.

The women who obtained information from peer group had high mean score i.e.51.13,44.40 in physical and socio-economic aspects .Women who obtained information from electronic media had high mean score i.e. 47.33 in psychological aspects.The difference between the mean score of all aspects were statistically non-significant.

The women who were overweight had high mean score i.e. 50.13 in physical aspects. Women who were obese had high mean score i.e. 47.64 ,43.05 in psychological and socio-economic aspects. The difference between the mean score of all aspects were statistically non-significant.

The women who had high waist hip ratio had high mean score i.e. 49.63, 46.35,43.06 in all three aspects of QOL .The difference between the mean score of all aspects were statistically non-significant.

The women who had 35-60 days cycle had high mean score i.e. 49.88, 46.67, 43.36 in all three aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who had 6-8 menstrual cycles had high mean score i.e. 51.23, 46.26 in physical and psychological aspects. Women having >10 menstrual cycles had high mean score i.e. 42.66 in socio-economic aspects. The difference between the mean score of all aspects were statistically non-significant.

The women who had 2-4 days of menstrual flow had high mean score i.e. 55.66, 48.86, 45.73 in all three aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who had >6 days of menstrual cycle had high mean score i.e. 51.15, 47.53,43.84 in all three aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who had normal hirsutism had high mean score i.e. 50.87, 46.60,44.03 in all three aspects of QOL. The difference between the mean score of all aspects were statistically non-significant.

The women who had mild acne had high mean score i.e.49.39, 43.91 in physical and socioeconomic aspects. Women who had no acne had high mean score i.e. 46.97 in psychological aspects. The difference between the mean score of all aspects were statistically non-significant with acne.

To find out relationship of quality of life among women with polycystic ovarian disease with selected demographic variables.

TABLE-4

Relationship of levels of quality of life among women with polycystic ovarian disease with selected demographic variables.

N=100

Demographic Variables	Poor n (%)	Average n(%)	df	Chi-square
Age(in years)				
18-25	15	6	2	3.4608[NS]
26-33	38	8		
34-41	30	3		
Education				
Illiterate	17	4	3	1.5482[NS]
Upto matric	34	8		
Senior secondary	27	4		
Graduate or above	4	2		
Family income				
(`/month)				
≤10000	28	6	2	1.2919[NS]
10001-20000	37	7		
>20000	16	6		

Dietary Habits

Vegetarian	31	7		
Eggetarian	22	4	2	0.1759^{NS}
Non-vegetarian	29	7		

Place of residence

Urban	36	6	1	0.6768^{NS}
Rural	46	12		

Occupation

Working	31	6	1	0.1266^{NS}
Non-working	51	12		

Type of family

Nuclear	17	3	2	5.7522^{NS}
Joint	39	6		
Extended	23	12		

Family history of PCOD

Yes	26	8	1	1.0671^{NS}
No	56	10		

Religion

Hindu	25	5		
Sikh	35	15	2	3.4392^{NS}
Others	12	8		

Marital status

Unmarried	40	9	1	0.0088^{NS}
Married	42	9		

Source of information

Electronic media	11	4	3	0.7068^{NS}
Peer group	12	3		
Print media	12	2		
Health personnel	45	11		

Nutritional status(as

per BMI)

Normal	14	4		
Overweight	37	6	2	2.5236^{NS}
Obese	28	11		

Waist hip ratio(WHO)

Normal	15	3	1	0.4972^{NS}
High	62	20		

Interval of menstrual cycle(in days)

21-34	44	11	2	0.0347^{NS}
35-60	29	7		
>60	7	2		

No. of menstrual cycles(per year)

6-8	52	17		
8-10	21	1	2	4.7756^{NS}
>10	8	1		

Amount of menstrual flow(number of pads used/day)

<2	2	0	3	4.2398^{NS}
2-4	9	6		
4-6	44	10		
>6	20	9		

Duration of menstrual cycle(in days)

<4	25	7	2	5.8867^{NS}
4-6	49	6		
>6	8	5		

Hirsutism

Normal	42	16			NS=Non-
Mild	32	3	2	5.0862^{NS}	significant
Moderate	6	1			Table 4
					shows
Acne					relationshi
None	30	4			p of
Mild	45	4	2	2.8248^{NS}	quality of
Moderate	13	4			life among
					women

with polycystic ovarian disease with selected variables. It depicts that 15% and 6% women with polycystic ovarian disease had poor and average quality of life in age group of 18-25 years. 38% and 8% women had poor and average quality of life in age group of 26-33 years.30% and 3% women had poor and average quality of life in age group of 34-41 years. It has been observed that age had no significant relationship with levels of quality of life of women.

17% and 4% women with polycystic ovarian disease who were illiterate had poor and average quality of life.34% and 8% women who were educated upto matric had poor and average quality of life.27% and 4% women who were educated upto senior secondary had poor and average quality of life.4% and 2% women who were graduate or above had poor and average quality of life. It has been observed that education had no significant relationship with levels of quality of life of women.

28% and 6% women whose family income was ≤10000 had poor and average quality of life.37% and 7% women whose family income was 10001-20000 had poor and average quality of life.16% and 6% women whose family income was >20000 had poor and average quality of life. It has been observed that family income had no significant relationship with levels of quality of life of women.

31% and 7% women who were vegetarian had poor and average quality of life.22% and 4% women who were eggetarian had poor and average quality of life.29% and 7% women who were non-vegetarian had poor and average quality of life.It has been observed that dietary habits had no significant relationship with levels of quality of life of women.

36% and 6% women belonging to urban area had poor and average quality of life.46% and 12% women belonging to rural area had poor and average quality of life.It has been observed that place of residence had no significant relationship with levels of quality of life of women.

31% and 6% women who were working had poor and average quality of life.51% and 12% women who were non-working had poor and average quality of life. It has been observed that occupation had no significant relationship with levels of quality of life of women.

17% and 3% women who belonged to nuclear family had poor and average quality of life.39% and 6% women who belonged to joint family had poor and average quality of life.23% and 12% women who

belonged to extended family had poor and average quality of life. It has been observed that type of family had no significant relationship with levels of quality of life of women.

26% and 8% women who had family history of PCOD had poor and average quality of life.56% and 10% women who had no family history of PCOD had poor and average quality of life. It has been observed that family history of PCOD had no significant relationship with levels of quality of life of women.

25% and 5% women who were Hindu had poor and average quality of life.35% and 15% women who were Sikh had poor and average quality of life.12% and 8% women who belonged to other category had poor and average quality of life. It has been observed that religion had no significant relationship with levels of quality of life of women.

40% and 9% unmarried women had poor and average quality of life.42% and 9% married women had poor and average quality of life. It has been observed that marital status had no significant relationship with levels of quality of life of women.

11% and 4% women who obtained information from electronic media had poor and average quality of life.12% and 3% women who obtained information from peer group had poor and average quality of life.12% and 2% women who obtained information from print media had poor and average quality of life. 45% and 11% women who obtained information from health personnel had poor and average quality of life. It has been observed that source of information had no significant relationship with levels of quality of life of women.

14% and 4% women who had normal nutritional status had poor and average quality of life.37% and 6% women who were overweight had poor and average quality of life.28% and 11% women who were obese had poor and average quality of life. It has been observed that nutritional status had no significant relationship with levels of quality of life of women.

15% and 3% women who had normal waist hip ratio had poor and average quality of life.62% and 20% women who had high waist hip ratio had poor and average quality of life. It has been observed that waist hip ratio had no significant relationship with levels of quality of life of women.

44% and 11% women who had 21-34 days interval of menstrual cycle had poor and average quality of life. 29% and 7% women who had 35-60 days interval of menstrual cycle had poor and average quality of life.7% and 2% women who had >60 days menstrual cycle had poor and average quality of life. It has been observed that interval of menstrual cycle had no significant relationship with levels of quality of life of women.

52% and 17% women who had 6-8 menstrual cycles had poor and average quality of life.21% and 1% women who had 8-10 menstrual cycles had poor and average quality of life.8% and 1% women who had >10 menstrual cycles had poor and average quality of life.It has been observed that number of menstrual cycles had no significant relationship with levels of quality of life of women.

2% women who used <2 pads had poor quality of life.9% and 6% women who used 2-4 pads had poor and average quality of life.44% and 10% women who used 4-6 pads had poor and average quality of life. 20% and 9% women who used >6 pads had poor and average quality of life. It has been observed that amount of menstrual flow had no significant relationship with levels of quality of life of women.

25% and 7% women who had <4 days duration of menstrual cycle had poor and average quality of life.49% and 6% women who had 4-6 days duration of menstrual cycle had poor and average quality of life.8% and 5% women who had >6 days duration of menstrual cycle had poor and average quality of life. It has been observed that duration of menstrual cycle had no significant relationship with levels of quality of life of women.

42% and 16% women who had normal hirsutism had poor and average quality of life.32% and 3% women who had mild hirsutism had poor and average quality of life.6% and 1% women who had moderate hirsutism had poor and average quality of life. It has been observed that hirsutism had no significant relationship with levels of quality of life of women.

30% and 4% women who had no acne had poor and average quality of life.45% and 4% women who had mild acne had poor and average quality of life.13% and 4% women who had moderate acne had poor and average quality of life. It has been observed that acne had no significant relationship with levels of quality of life of women.

Objective 3-To prepare and distribute information booklet on lifestyle modifications among women with polycystic ovarian disease.

Major findings

Findings related to Demographic Variables

- ✓ 46% women were from age group 26-33 years and least i.e.22% were from age group 18-25 years.

- ✓ 42% women were educated upto matric and least i.e.21% were illiterate.

- ✓ 44% women belonged to family income 10001-20000 and least i.e.22% belonged to >20000.

- ✓ 38% women were vegetarian and least i.e.26% were eggetarian.

- ✓ More than half of women i.e.58% were residing in rural area and least i.e.42% in urban area.

- ✓ More than half of women i.e.63% were non-working and least i.e.34% were working.

- ✓ 45% of the women were from joint family and least i.e.20% were from nuclear family.

- ✓ More than half of women i.e.66% had no family history of PCOD and least i.e.34% had family history of PCOD.

- ✓ Half of women i.e.50% were Sikh and least i.e.20% were from other category of religion.

- ✓ Half of women i.e.51% were married and 49% were unmarried.

- ✓ More than half of women i.e.56% got information from health personnel and least i.e.14% from print media

- ✓ 43% women were overweight and least i.e.18% had normal nutritional status.

- ✓ Majority of women i.e.82% had high waist hip ratio and least i.e.18% had normal waist hip ratio.

- ✓ More than half women i.e.55% had 21-34 days of menstrual cycle and least i.e.9% had >60 days of menstrual cycle.

- ✓ More than half of women i.e.69% had 6-8 menstrual cycles and least i.e.9% had >10 menstrual cycles.

- ✓ More than half of women i.e.53% used 4-6 pads and least i.e.15% used 2-4 pads.

- ✓ More than half of women i.e.55% had 4-6 days duration of menstrual cycle and least i.e. 13% had 6-8 days duration of menstrual cycle.

- ✓ More than half of women i.e.58% were normal and least i.e.7% had moderate hirsutism.

- ✓ 48% had mild acne and least i.e.15% had moderate acne.

Findings related to assessment of quality of life among women with polycystic ovarian disease

Majority of women i.e.82% had poor quality of life and least i.e.18% had average quality of life.

**Findings related to relationship of quality of life among women with polycystic ovarian disease with selected demographic variables.**

There was no statistically significant relationship found between age,education,family income, dietary habits ,place of residence ,occupation, type of family,family history of PCOD, religion, marital status, source of information, nutritional status,waist hip ratio, interval of menstrual cycle ,number of menstrual cycles, amount of menstrual flow, duration of menstrual cycle ,hirsutism, acne and quality of life of women with polycystic ovarian disease.

DISCUSSION

In this section the researcher interpretively discuss the results of the study. It is in the discussion, the researcher ties together all the loose ends of the study. The findings of the present study have been discussed in accordance with the objectives of the research and literature review.

Objective I- To assess the quality of life among women with polycystic ovarian disease.

In present study it showed that 82% women with polycystic ovarian disease had poor quality of life and least 18% had average quality of life. These results were supported by a study conducted by Sigrid Elsenbruch, Susanne Hahn on quality of life, psychosocial well-being, and sexual satisfaction in women with polycystic ovarian disease showed poor quality of life.

The result of present study was also consistent with other study conducted by Susanne Tan, Katja Pleger on clinical and psychological symptoms on quality-of-life in polycystic ovarian disease. Result showed that women with polycystic ovarian disease had significant reduction in quality-of-life, increase in psychological disturbances, and decreased sexual satisfaction when compared with healthy controls.

Objective II- To establish relationship of quality of life among women with polycystic ovarian disease with selected demographic variables.

The result of present study showed no significant relationship of nutritional status whereas it was supported by study conducted by Georgina L Jones , Manisha Palep-Singh on South Asian women with PCOD had poor health-related quality of life than Caucasian women with PCOD. In this study, nutritional status had no significant relationship on quality of life.

The result of present study showed no significant relationship of hirsutism whereas it was contraindicated by study conducted by Berna Dilbaz,[1] Mehmet Çınar on health related quality of life among different PCOD phenotypes of infertile women detected that hirsutism had significant relationship on quality of life of women. It was contraindicated in other study conducted on quality of life and psychological morbidity in women with polycystic ovarian disease revealed significant relationship of hirsutism on quality of life.

The result of present study showed no significant relationship of acne whereas it was contradicted in the study conducted on health-related quality of life measurement in women with polycystic ovarian disease showed there is significant relationship of acne on quality of life.

The result of present study showed no significant relationship of interval of menstrual cycle whereas it was contradicted in the study conducted by Krishna Upadhya, Maria Trent on effects of Polycystic ovarian disease on health-related quality of Life of women showed there is significant relationship of interval of menstrual cycle on quality of life of women with polycystic ovarian disease.
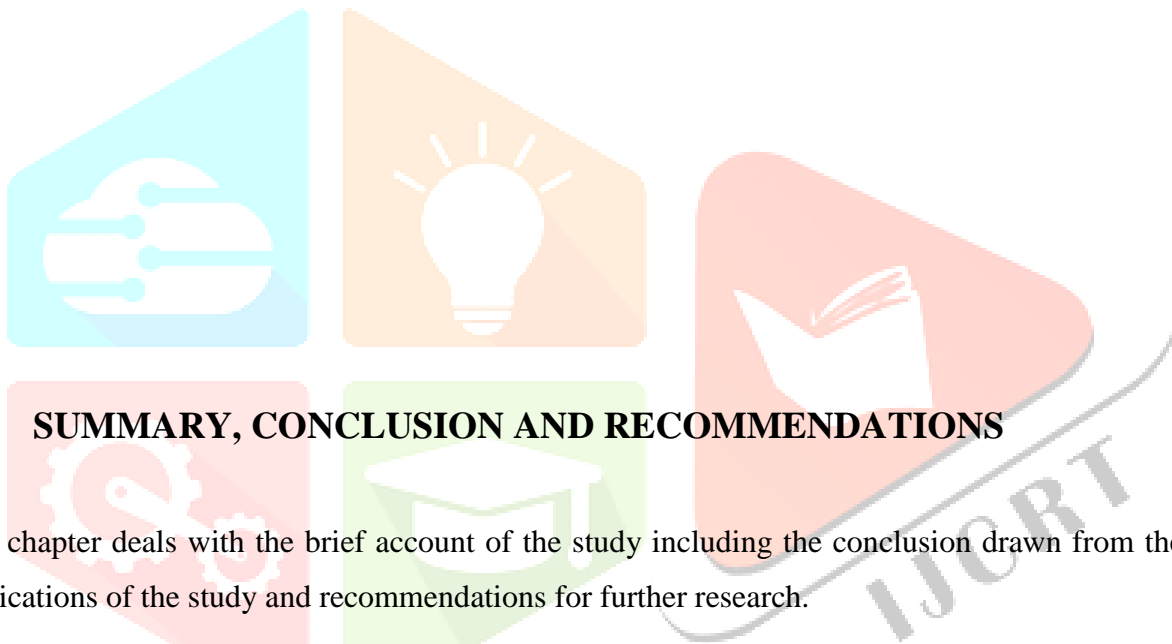
SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the brief account of the study including the conclusion drawn from the findings, implications of the study and recommendations for further research.

Summary

The present study was undertaken by the researcher to assess the quality of life among women with polycystic ovarian disease in selected hospitals, Punjab. The aim of study was to assess the quality of life among women with polycystic ovarian disease. To accomplish the objectives and determine the methodology of the study, a thorough review of literature was done. Quantitative approach was adopted for the study. The research tool was circulated among panel of experts for establishing the validity of the content and necessary modifications were made according to expert's opinion.

Modified PCOSQOL questionnaire was used to collect data. The tool consists of 2 parts:

Section A:- It includes demographical variables.

Section B:- Modified PCOSQOL questionnaire to assess the quality of life among women with polycystic ovarian disease.

A pilot study was conducted on 1/10th of the sample i.e.10 women with polycystic ovarian disease. The study was conducted at Gurcharan Kanwal Hospital and Civil Hospital, Hoshiarpur, Punjab .In the selection of sample, non-probability purposive sampling used. The sample for the main study comprised of 100 women with polycystic ovarian disease.

Before the data collection, the permission was obtained from senior medical officer, Civil Hospital, Hoshiarpur and managing director of Gurcharan Kanwal Hospital. Then the data were collected by establishment of rapport with the sample and confidentiality of their responses was assured and for data collection questionnaire was distributed among women with polycystic ovarian disease.

The data were analyzed and interpreted in terms of objectives of study. The descriptive and inferential statistics were used such as mean, percentage, standard deviation, t test, F test, chi square.

The findings showed that 82% women with polycystic ovarian disease had poor quality of life and 18% had average quality of life.

The findings of the study showed that there is no significant relationship of all demographic variables with quality of life of women with polycystic ovarian disease.

Conclusion

The study revealed that most of the women with polycystic ovarian disease had poor quality of life as the result of study showed that 82% of the women had poor quality of life,18% of the women had average quality of life.

Limitations

The study was limited to small sample due to time constraints so findings cannot be generalized.

Implications

The findings of the present study have several implications which are discussed in following areas.

1. Nursing education

3. Nursing administration

4. Nursing research

Nursing education

Polycystic ovarian disease put negative impact on the health of the women. It introduces ugly consequences like infertility, obesity, depression or anxiety, hirsutism, acne. It is already included in nursing curriculum so that the nursing teachers should be given on education regarding polycystic ovarian disease to students.

Nursing service

Poor knowledge among women regarding polycystic ovarian disease affects the health status of women. Nursing plays very important role in imparting the knowledge regarding polycystic ovarian disease, its causes, sign and symptoms and treatment measures. Thus acquisition of knowledge helps in better outcome of health condition of women with polycystic ovarian disease. The findings of the study indicate that the women with polycystic ovarian disease had poor quality of life and their knowledge can be

enhanced by providing guidelines. The nurses' involvement in providing lifestyle modifications in women regarding polycystic ovarian disease leads to better health outcome of women.

Nursing administration

It is essential for nurse administrator to be familiarized with the philosophy of holistic health and they should see the objectives of the nurses' service department are formulated in such a manner that it provide for the integration of physical, psychological, social and spiritual health into general health system. In this era of knowledge explosion and technological changes, nursing become complex discipline with rapidly growing body of knowledge. The nurse administrator should:

✓ Collaborate with governing bodies to formulate standard policies and protocols to emphasize nurses' lifestyle modifications regarding polycystic ovarian disease.

✓ Arrange and conduct workshops, conferences, and seminars on polycystic ovarian disease, its causes, symptoms, treatment and lifestyle modifications.

✓ Provide opportunities for nurse to attend training programmes on lifestyle modifications in polycystic ovarian disease.

Nursing research

It is essential to identify at present the quality of life of women with polycystic ovarian disease in order to know the extent of information necessary to be given on talk. The extensive research must be conducted in this area to identify several more effective methods of education. This study also brings about facts that more studies need to be done in different settings, which is culturally acceptable as better teaching strategies of education. This study can be baseline for the future study.

Recommendations

The following recommendations are made on the thesis of the study:-

✓ The study can be replicated on large sample to validate and generalize the findings

✓ Similar study can be conducted in different settings like in community.

✓ Same study can be replicated by including knowledge and attitude of women regarding polycystic ovarian disease.

✓ Comparative study can be conducted in urban and rural areas.

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