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A COMMUNITY-BASED STUDY TO IDENTIFY THE RISK FACTORS OF POLYCYSTIC OVARY SYNDROME

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ABSTRACT

Polycystic ovarian syndrome is a complicated disorder marked by high androgen levels. Levels,irregular menstruation periods, and/or tiny cysts on one or both ovaries. It was first reported in 1935 by Stein and Leventhal. It is one of the most common endocrine disorders in women of reproductive age, affecting 5% to 10% of the global population. The primary goal of this research is to discover polycystic ovary syndrome risk factors and raise awareness among women of reproductive age. Study design: Prospective observational study Study site: community (DHARMAPURI). Study duration: 6 months (July 2021 – Dec 2021). Study population: 310 people Study materials: Patient data collection proforma, Informed consent form, Patient information leaflet, Study criteria: - Inclusion criteria: All women in reproductive age group (15 – 44 years), Women willing to participate, Pregnant women. This prospective study will be carried out after obtaining the permission of institutional review board, Padmavathi College Of Pharmacy, Dharmapuri, India. Survey was conducted on women of reproductive age group (15 – 45 years), in rural areas near Tirupati, between July 2021 to Dec 2021 will be included in their study. Menopausal women and unwilling to participate were excluded from the study. PCOS is a common gynecological disorder which affects ovaries and ovulation in women having sedentary life style. Most of the patients in our study are unaware of PCOS. obesity and overweight were common conditions observed from the study which evaluated that it is a major risk factor for PCOS. Various other risk factors like acne, unwanted hair growth, stress, acanthosis was observed in this study. some specific norms like size of cysts, levels of testosterone, blood glucose levels were not considered because this is a community-based awareness program regarding PCOS. In this study, as it is most emerging disorder proper awareness regarding risk factors, diagnosis, diet changes, exercises are provided. Life style modification and proper diet can help in better management of PCOS.

Key words: Study To Identify Polycystic Syndrome Risk Factors And Provide Community-Based

INTRODUCTION

Polycystic ovarian syndrome is a complicated disorder marked by high androgen levels. Levels,irregular menstruation periods, and/or tiny cysts on one or both ovaries. It was first reported in 1935 by Stein and Leventhal. It is one of the most common endocrine disorders in women of reproductive age, affecting 5% to 10% of the global population[1].

The condition might be morphological (polycystic ovaries) or mostly biochemical (polycystic ovary syndrome) (hyperandrogenaemia). Hyperandrogenism, a symptom of PCOS, can result in follicular development suppression, ovarian microcytes, anovulation, and menstrual irregularities. PCOS is a complex disorder that affects at least 7% of adult females. Endometrial cancer, cardiovascular disease, dyslipidemia, and type 2 diabetes mellitus are all more common in women with PCOS[2].

AIM AND OBJECTIVES
AIM:

The primary goal of this research is to discover polycystic ovary syndrome risk factors and raise awareness among women of reproductive age[3].

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OBJECTIVES:
- To determine the prevalence of illness among women of reproductive age.
- To investigate the prevalence of pcos risk factors in this group.
- To inform women on the need of early disease detection.
- Understand the technique to working up a patient with pcos symptoms.
- To increase the number of people who stick to their lifestyle adjustments
- To increase one's own self-care

METHODOLOGY MATERIALS AND METHODS:
Study design: Prospective observational study
Study site: community (DHARMAPURI)
Study duration: 6 months (July 2021 – Dec 2021)
Study population: 310 people

Study materials:
- Patient data collection proforma
- Informed consent form
- Patient information leaflet

Study criteria: - Inclusion criteria:
- All women in reproductive age group (15 – 44 years)

- Women willing to participate
- Pregnant women

Exclusion criteria:
- Menopausal women.
- Patients unwilling to participate in the study.

Method of data collection:
This prospective study will be carried out after obtaining the permission of institutional review board, Padmavathi College of Pharmacy, Dharmapuri, India. Survey was conducted on women of reproductive age group (15 – 45 years), in rural areas near Tirupati, between July 2021 to Dec 2021 will be included in their study. Menopausal women and unwilling to participate were excluded from the study[4].

A specially designed questionnaire will be used for data collection which include participants demographics, family, past history, menstrual history, risk factors, diet & physical activity. The data will obtain by direct participant interview and from patient case profiles. Approximately 400 cases will be collected from the survey, according to study criteria risk factors are identified, by using Rotterdam criteria, NIH, SF-12, and AE-PCOS criteria[5].
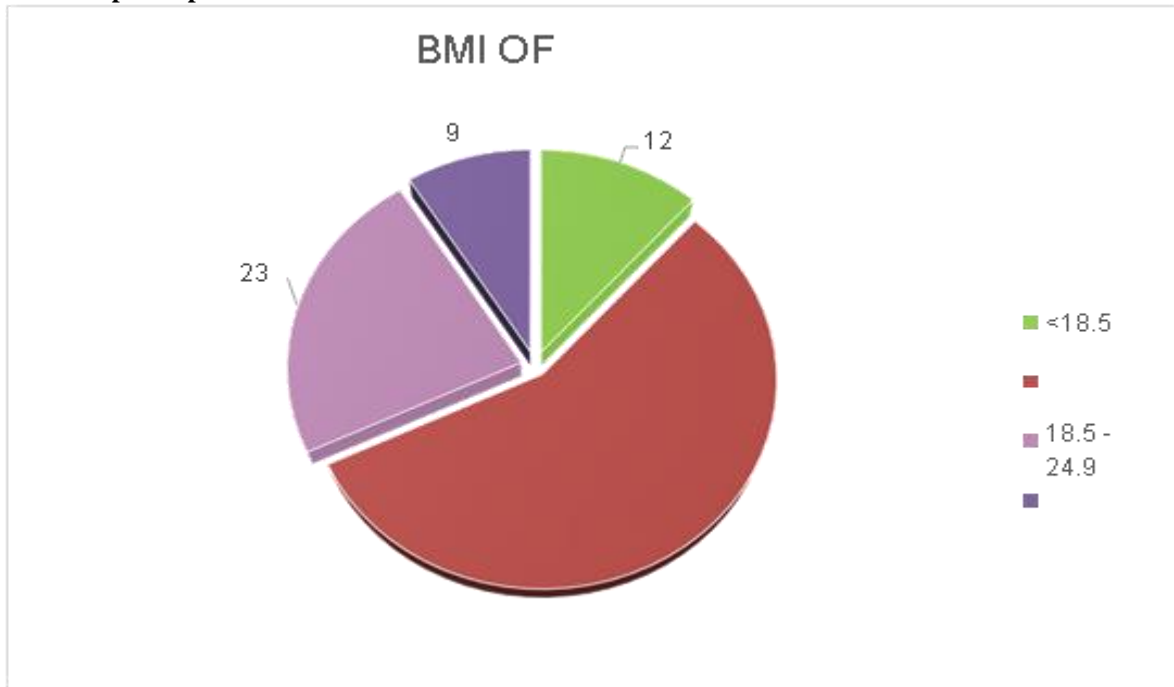
RESULTS
Fig No: 1 Age wise distribution
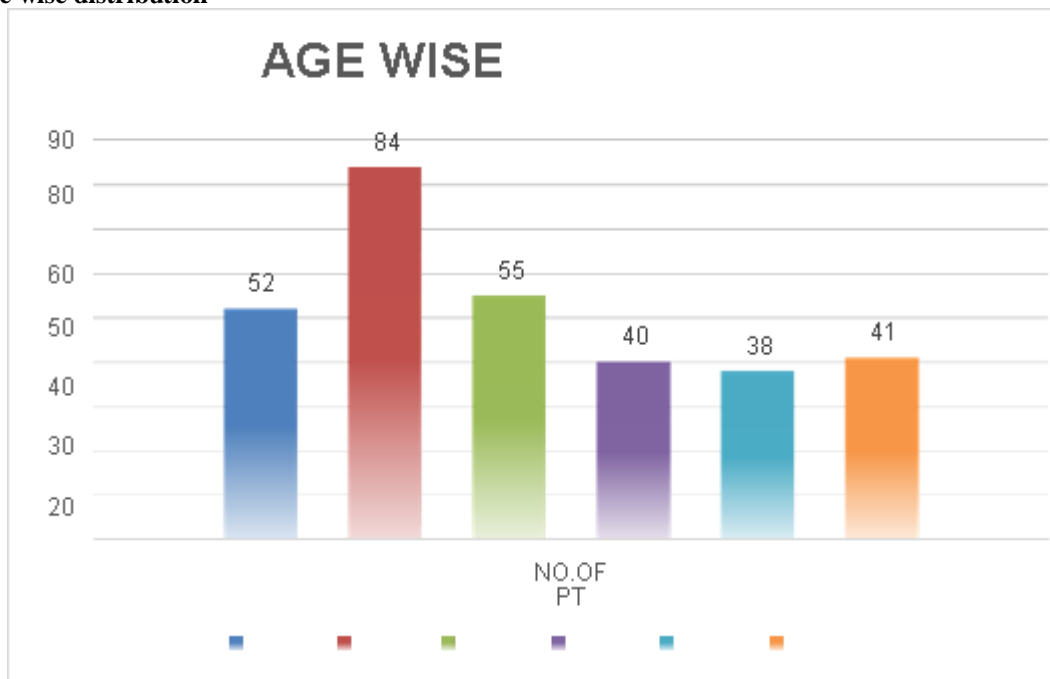
Out of 310 people , highest number of people was under the age group of 20-24 years(27.096%) followed by25-29 years(17.741%) , followed by 15-19 years(16.77%) , followed by 40- 44years(13.225%) , followed by 30-34 years (12.903%) and the lowest number of people was under the age group of 35-39 years (12.25%) respectively.

Fig No: 2 BMI of participants


BMI OF

9   12

23

■ <18.5

■

■ 18.5 - 24.9

■

Out of 310 people 175(56.45%) people fall under normal body weight, 35(11.29%) people fall under underweight, 72(23.22%) people fall under over weight and 28(9.03%) people fall under obese.

Fig No: 3 Marital status of participants

MARITAL

165

160

145

14

■ MARRIED

■ UNMARRI

MARRIE   UNMARRI

Out of 310 people, the highest number of people were married i.e. 165 and 145 were unmarried.

Fig No: 4 Menstrual history of participants
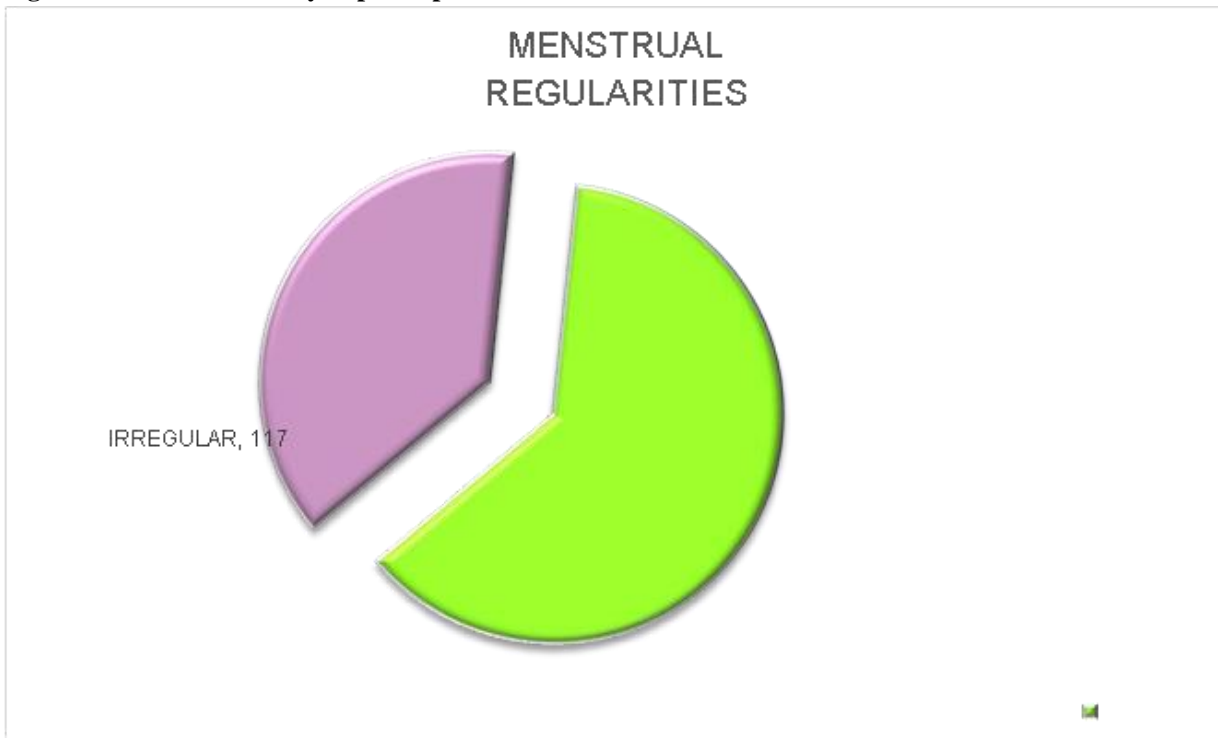

MENSTRUAL REGULARITIES

IRREGULAR, 117

Out of 310 people,193 (62.2%) people are on regular menstruation and 117(37.7%) people complain about irregular menstruation with 2 months to >5 months of irregular menstrual cycle

Fig No: 5 Risk factors seen in participants

RISK

28

17

15

8

18

14

- OBESITY
- STRESS
- ACANTHOSIS
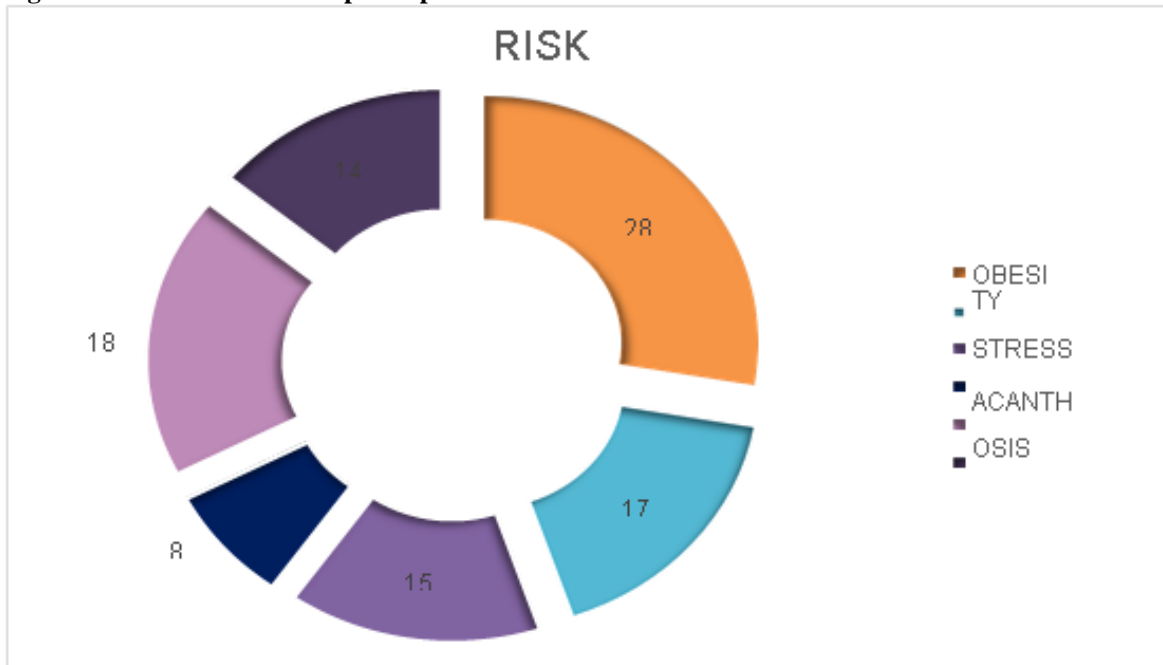
Out of 310 people 91,56,49,25,61,46 people are with risk factors of obesity, acne, stress, acanthosis, obstructive sleep apnea and hair growth respectively.

**Fig No: 6 Comorbidities seen in participants**
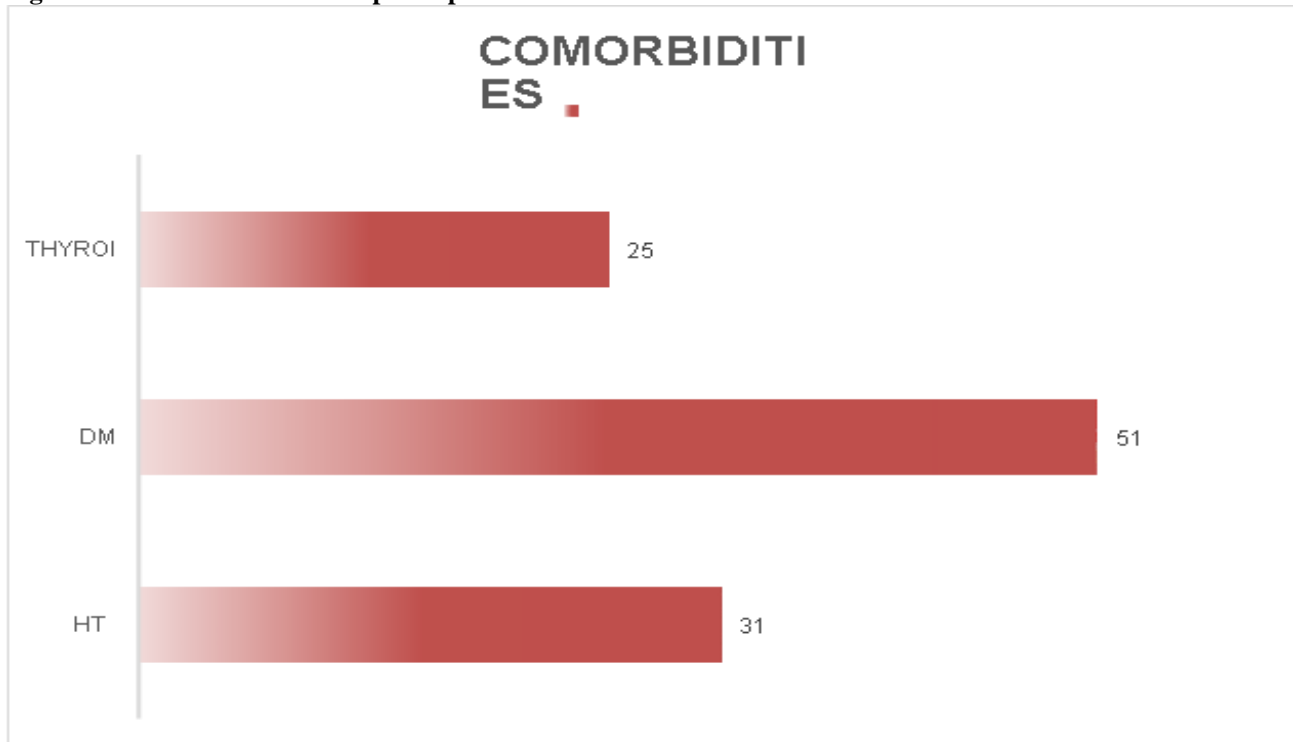
Out of 310 people, 31 people were with Hypertension, 51 People were with Diabetes Miletus and 25 people were with Thyroid.

Fig No: 7 Junk food intake
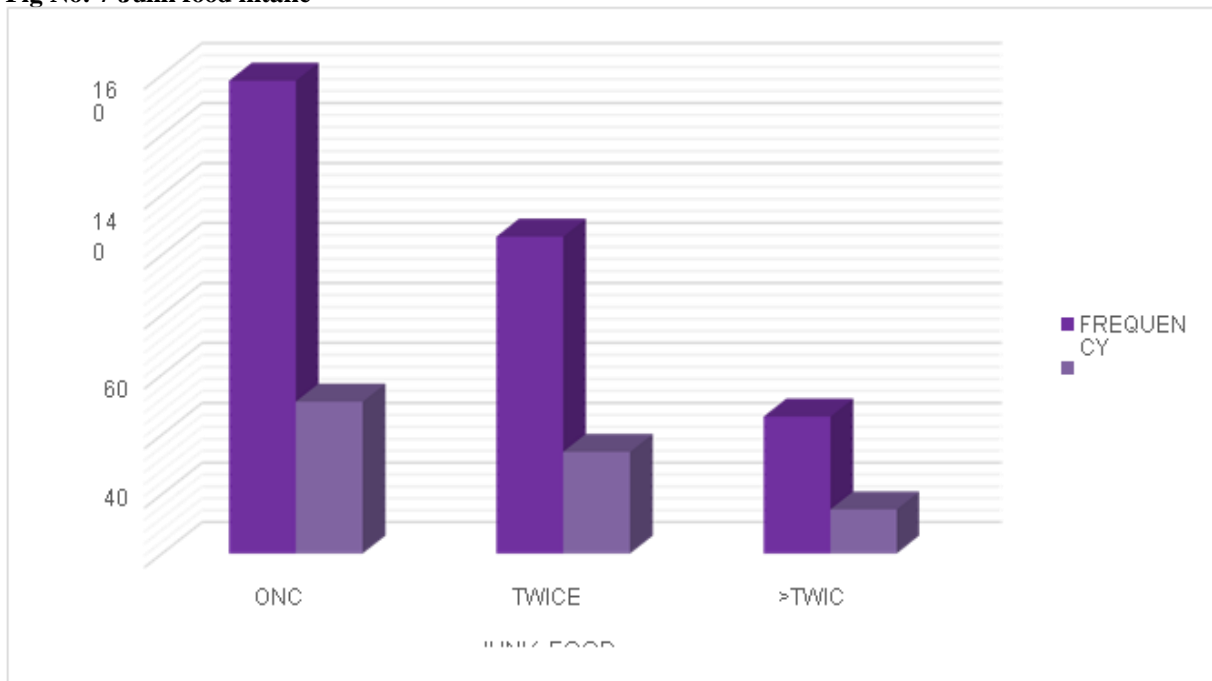
The above chart indicates junk food consumption by participants per week. The results were there are 158 participants consume junk food once a week, twice a week 106, more than twice a week 46 people

**Fig no: 8 Physical activity in participants**
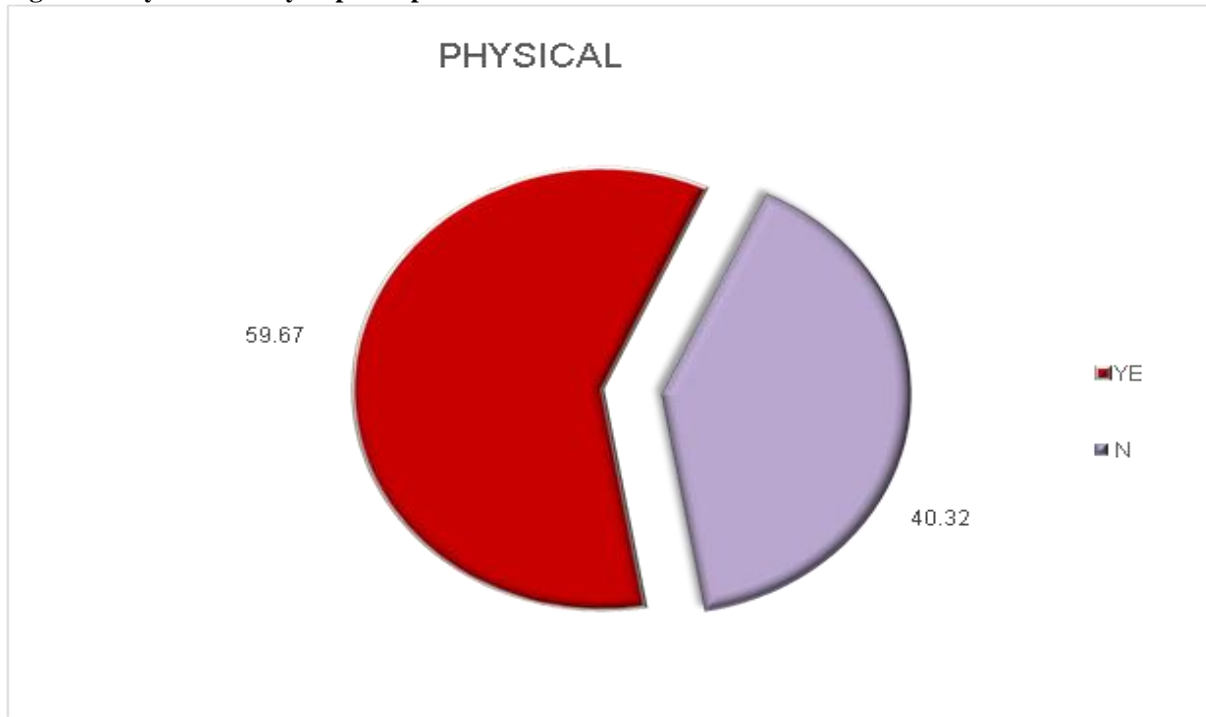
The above chart depicts the physical activity among the participants. The results were 59.7% of the participants are not involved in any kind of external physical activities and 40.3% of the people doing their regular physical activities

**Fig No: 9 Awareness of pcos among participants**
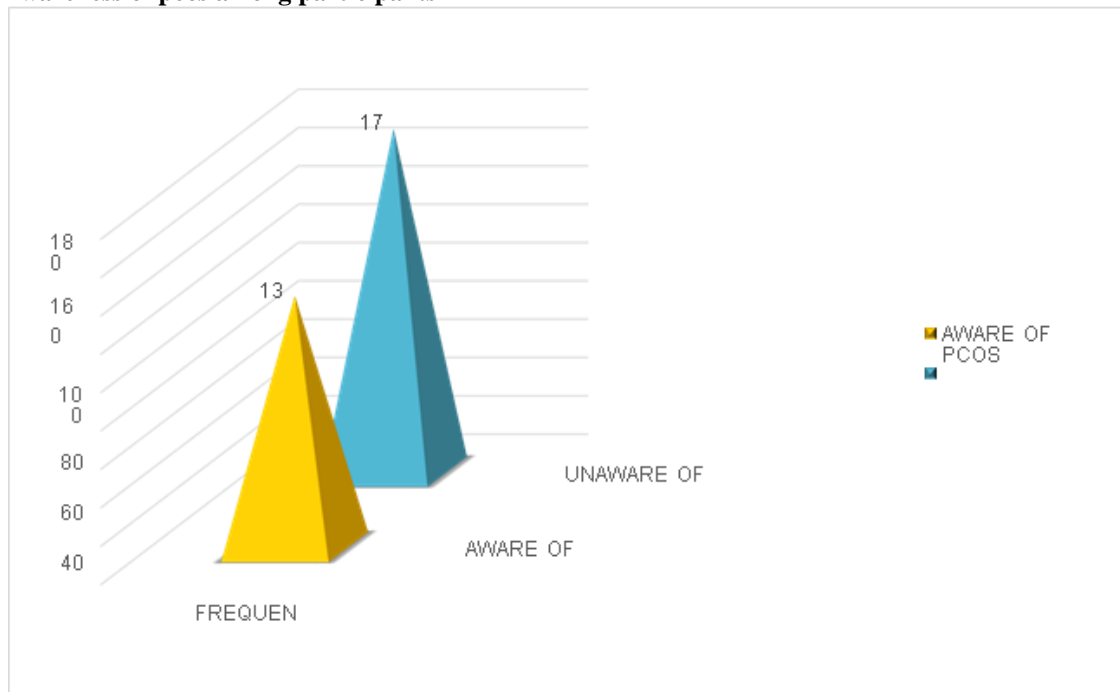
The above figure shows the data regarding awareness of pcos among the participants were 179 people are unaware of pcos and 131 people are aware of pcos

Fig No: 10 Months wise distribution of menstrual irregularity
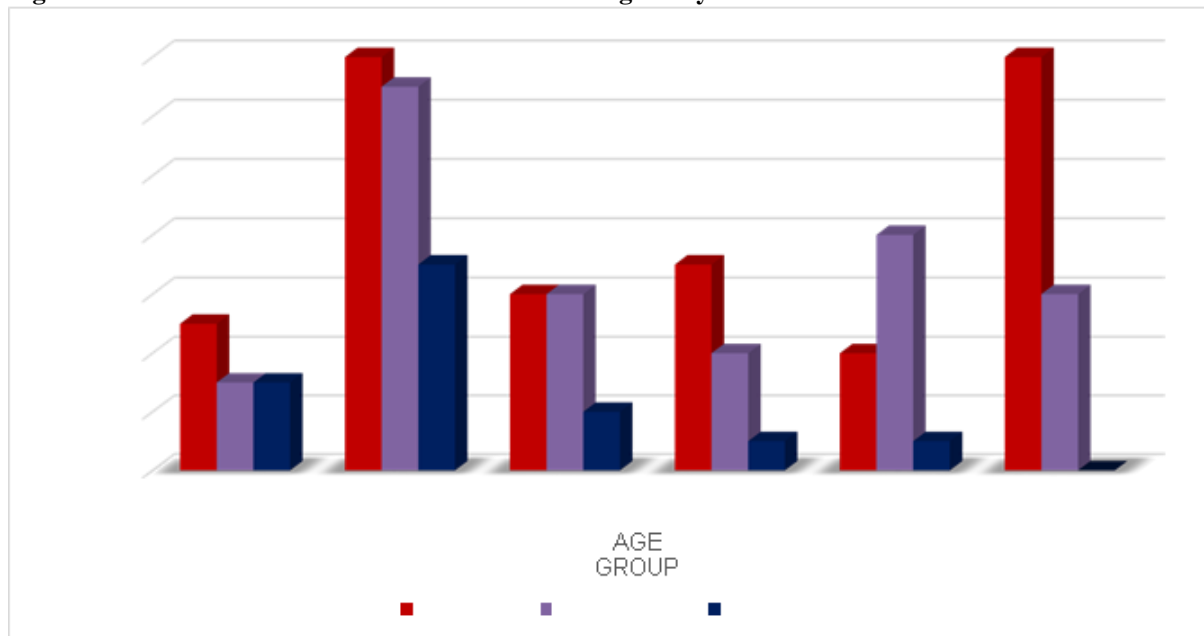
The above figure is an indication of months wise menstrual irregularity among different age groups of people were 50 people of all age groups have 3 months, 40 people have 4 – 5 months and 14 people have more than 5 months of menstrual irregularity

Fig No: 11 Multiple risk factors among the patients
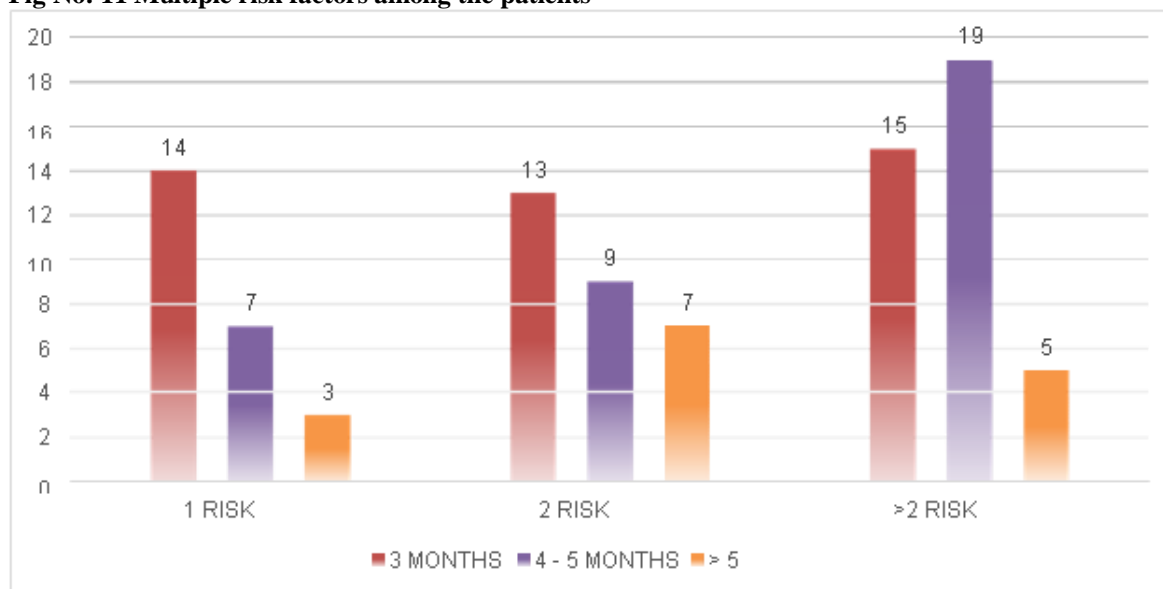
The above figure describes risk factors in the participants with irregular menstrual history. Those people with 2 or > 2 risk factors and more than 3 months of menstrual irregularity have more chances of developing of pcos.

DISCUSSION

This study includes 310 women belonging to age group of 15-45 years. Out of 310 highest number of people was under the age group of 20-24 years(27.096%). followed by25-29years(17.741%), followed by 15-19 years(16.77%), followed by 40- 44years(13.225%), followed by 30-34 years (12.903%) and the lowest number of people was under the age group of 35-39 years (12.25%) respectively. This study results correlates with the study results conducted by Shinde KS, et al. They also found that <24 years age group women have higher incidence of pcos[6].

Out of 310 people 175(56.45%) people fall under normal body weight, 35(11.29%) people fallunder underweight, 72(23.22%) people fall under over weight and 28(9.03%) people fall under obese[7]. This study results were similar to the study conducted by Beatriz Motta et al, they stated that obesity play a major role in developing of pcos. Another study conducted by Yildirim et al, stated that obesity is a major risk factor for pcos.

Among those women(310),165 were married and 145 were unmarried.Out of 310 people,193(62.2%) people are on regular menstruation and 117(37.7%) people complain about irregular menstruation with 2 months to >5 months of irregular menstrual cycle. The main concern in women with irregular periods was infertility irrespective of marital status[8]. These results were similar to that of the study conducted by Rameswarapu hari Priyanka et al. In their study the stated that oligomenorrhea and dysmenorrhea are two major risk factors and signs for development of pcos.

The risk of PCOS were found to be higher in urban population than rural because of sedentary life style and lack of exercise and junk food intake. In this study 59.7% of the participants are not involved in any kind of external physical activities and 40.3% of the People doing their regular physical activities. Study performed by Rameswarapu hari Priyanka et al stated that urban people are more in risk of developing of pcos than that of rural areas because of their sedentary lifestyle and irregular food habits[9].

Junk food intake, there are 158 participants consume junk food once a week, twice a week 106, more than twice a week 46 people. In our study 23.22% women are overweight and 9% women are obese. The study done by Eleni A et al, was similar to this study results. They stated that irregular pattern of food habits can lead to obesity which can be a risk factor for the future development of pcos. They also stated that comorbidities like disordered eating issues and weight should be handled while treatment of pcos

Some of the studies say that there are close association with risk of autosomal diseases. Family history of Hypertension, Diabetes Miletus, Thyroid are 10%,16.45%and 8.6% were found among 310 study population. A study performed by S. mustaniemi et al, and Coviello et al,stated that risk of development of hypertension, diabetes melitus and thyroid are more in the people affected with pcos. In our study pcos patients mostly have thyroid as their comorbidity[10].

Risk factors observed among study population are 28% obesity,18% obstructive sleep apnea,17% acne,15%stress,14% unwanted hair growth and 8% acanthosis. This study results correlates witha study conducted by theMaheswari thangavelu et al,stated thatthey observed oligomenorrhea in 74% of pcos women. Increased testosterone levels are correlated with LH/FSH ratio, hirsutism, and antral follicular count in pcos women. Another study by Raja shareef A. et alstated that prevalence of pcos is more in the women with obesity, acne, hair growth as risk factors[11]. A study done by Anna L damone et al,stated that women reporting pcos have increased depression, anxiety and perceived stress compared to women without pcos. Stress may act as key link between pcos and depression, anxiety and perceived stress.

A study performed by Shivaprakash G et al concluded that patients whi have family history of diabetes mellitus and obesity with a BMI > 30 are more likely to develop acanthosis nigricans.

Menstrual history was collected .37.7% women and 62.2% women have irregular and regular menstrual cycles respectively. Among 310 study population 33.548% women complained irregular periods more than 3 months. Women with more than two risk factors and irregular periods for more than 3 months are considered as the risk group according to the Rotterdam criteria. This study results correlate with the study conducted by the Shinde KS et al,and Rameswarapu hari Priyanka et al they concluded that people with more than 3 months of irregular menstrual history along with hyperandrogenism risk factors are under risk of development of pcos.

CONCLUSION

PCOS is a common gynecological disorder which affects ovaries and ovulation in women having sedentary life style. Most of the patients in our study are unaware of PCOS. obesity and overweight were common conditions observed from the study which evaluated that it is a major risk factor for PCOS. Various other risk factors like acne, unwanted hair growth, stress, acanthosis was observed in this study. some specific norms like size of cysts, levels of testosterone, blood glucose levels were not considered because this is a community-based awareness program regarding PCOS. In this study, as it is most emerging disorder proper awareness regarding risk factors, diagnosis, diet changes, exercises are provided. Life style modification and proper diet can help in better management of PCOS.

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