A SURVEY ON WOMEN POLYCYSTIC OVARY SYNDROME AND POLYCYSTIC OVARIAN DISEASE

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Abstract

` *In the contemporary day and age, there are numerous of problems faced by females regarding their health or reproductive organs like Polycystic Ovarian Disease (PCOD)and Polycystic Ovary Syndrome (PCOS) are conditions characterized by hormonal imbalances, irregular menstrual cycles, and the presence of multiple cysts in the ovaries. Both can lead to symptoms such as weight gain, acne, excess hair growth, and fertility issues. PCOS is the more widely used term and is considered a broader, more severe form of PCOD.PCOD is a milder condition with ovarian cysts and less severe hormonal imbalances, often manageable with lifestyle changes. PCOS is a more serious hormonal disorder that causes cysts, significant hormonal imbalances, and can lead to fertility and metabolic issues. This survey contains data collection of 251 women of different ages and having different genital issues. The data was assembled in 14 days from February 25, 2025 to March 10, 2025 and the data collection has been fetched from google form which has been created using several questions related to PCOD/PCOS.*

Keywords:
PCOD, PCOS, infertility, irregular cycle, female health issues, mood swings.

Objectives

The main goal was to understand and acknowledge the problems of women facing Polycystic ovary syndrome /Polycystic ovary disorder and the proportion of women having complication due to these disorders, which is an increasing number nowadays. The study concluded with the lack of knowledge in women about these disorders and still having symptoms which is making their genital health even worse. The need for intervention in women's health can be seen in this research.

Introduction

Today, the most prevalent disorder in females is PCOD/PCOS. PCOD or PCOS is a condition that impacts women’s ovaries, the reproductive organs that produce progesterone and estrogen hormones which helps in balancing the menstrual cycle and releases a small amount of hormones inhibin, relaxing, and male hormones called androgens. Almost 10% proportion of women in the world are suffering from PCOD. In contrast to PCOD women with PCOS fabricate higher-than-normal amounts of male hormones. This hormone variation causes them to skip menstrual cycle and results in infertility or difficulty in it. According to the recent studies around 1 in 5 women are estimated to have PCOD/PCOS which is the pre-eminent cause of infertility. Our studies basically dive into what PCOD/PCOS is and why is it becoming so common in women?

Pcod (Polycystic Ovary Disease)

It is a hormonal disorder that interferes with the normal fertility cycle in women. This condition arises when one of the ovaries begins to excessively produce immature eggs, which then accumulate within the ovary. The ovaries, as the female reproductive organs, play a crucial role in pregnancy. They are responsible for the production of hormones such as progesterone and estrogen, which regulate the ovulation process necessary for conception, as well as relaxing, a hormone that facilitates the stretching of muscles during pregnancy. Furthermore, the ovaries are vital for the regulation of the menstrual cycle in women. Consequently, PCOD significantly impacts a woman's menstrual cycle and overall health. This happens due to poor lifestyle, obesity, stress and hormonal imbalance.

Pcos (Polycystic Ovary Syndrome)

It is a collection of symptoms resulting from hormonal imbalances in women. It primarily impacts the ovaries, which are the small organs responsible for storing a woman's eggs. However, its effects can extend beyond the reproductive system, influencing various aspects of overall health. PCOS is a prevalent condition among women of reproductive age and, if left untreated, may lead to significant health complications. Ovulation occurs when a mature egg is released from an ovary, allowing for the possibility of fertilization by male sperm. If fertilization does not take place, the egg is expelled from the body during menstruation. PCOS (Polycystic Ovary Syndrome) is the primary cause of infertility, as it creates a hormonal imbalance that disrupts ovulation, making it difficult to conceive; essentially, PCOS is considered the most common cause of female infertility due to its impact on regular menstrual cycles and egg release.

One of the most prevalent indicators/Symptom of polycystic ovary syndrome (PCOS) is the occurrence of irregular menstrual cycles, which may manifest as infrequent, prolonged, or missed periods. Increased levels of male hormones, known as androgens, frequently result in excessive hair growth (hirsutism) in areas such as the face, chest, abdomen, and back, along with the presence of acne and oily skin. Many women affected by PCOS also face challenges with weight management, often experiencing weight gain or difficulty in losing weight due to insulin resistance, a condition commonly linked to PCOS. This insulin resistance may also contribute to thinning hair or hair loss on the scalp. Furthermore, skin darkening, particularly in regions such as the neck, underarms, and groin, may be observed. Some women may encounter difficulties with conception due to fertility issues, as PCOS can interfere with regular ovulation. Pelvic discomfort, particularly during ovulation, may also be a symptom, alongside reported mood fluctuations, including feelings of depression and anxiety. Additionally, women with PCOS may be at risk for sleep apnea, particularly if they are overweight, and there is a heightened likelihood of developing insulin resistance, which can elevate blood sugar levels and increase the risk of type 2 diabetes. In summary, the symptoms associated with PCOS can differ significantly, and it is advisable to seek consultation with a healthcare provider for accurate diagnosis and appropriate treatment.

The precise etiology or cause of Polycystic Ovary Syndrome (PCOS), also referred to as Polycystic Ovarian Disease (PCOD), remains incompletely understood; however, various factors are believed to play a role in its manifestation among women. Hormonal imbalances are particularly significant, especially the elevated levels of androgens (male hormones), which can disrupt normal ovulation, resulting in irregular menstrual cycles and the formation of ovarian cysts. Insulin resistance is another critical element, characterized by the body's cells becoming less responsive to insulin, prompting the pancreas to secrete additional insulin. This surplus of insulin can lead to increased androgen production, manifesting in symptoms such as excessive hair growth, acne, and challenges in weight management. Genetic predisposition is also considered a contributing factor, as PCOS frequently appears within families, suggesting a hereditary link. Furthermore, inflammation has been associated with PCOS, as affected women often exhibit elevated levels of inflammation, which may exacerbate insulin resistance and other related symptoms. Environmental influences, including diet, lifestyle choices, and stress, may also affect the onset and severity of PCOS, although they are not necessarily the primary causes. Collectively, these factors can disrupt the hormonal equilibrium and metabolic functions that govern menstrual cycles and fertility in women, ultimately leading to the development of PCOS

ISSN: 2278-4632
Vol-15, Issue-04, No.02, April: 2025

Literature Review

Polycystic ovarian disorder represents the most prevalent endocrine disorder experienced by female adults who are capable of reproduction. The authors designed an online structured questionnaire to gather information from 123 medical UG students who are part of the batch 2023 in different medical institutions. The study participants mostly had a sleep duration of 6-8 hours per day

yet some indicated unhealthful or disrupted sleeping patterns showing a need for improved sleep practices [1]**.** The female population often encounters endocrine disorders called Polycystic Ovary Syndrome (PCOS) and Polycystic Ovary Disorder (PCOD) in substantial numbers. The proposed intervention contains specific strategies for dietary change while also including exercise together with stress management and sleep adjustments [2]**.**

In this study, the combination of different ML models including logistic regression (LR), random forest (RF), decision tree (DT) and naive Bayes (NB), support vector machine (SVM) and k-nearest neighbor (KNN), XGBoost and Ad boost algorithm is utilized for feature selection and model identification requirements. The PCOS benchmark dataset was used to generate experimental results which were split into two ratios consisting of 70:30 and 80:20. Stacking ML using REF feature selection produced the best accuracy rate of 100 according to experimental results [3]**.** This paper contains a brief overview of PCOD diagnosis including its origins and consequences coupled with efficient treatment methods. The study collected survey data from 120 participants that fall in the 18 – 30 years age range using questionnaire analyses [4]**.** Researchers identified suitable studies followed by extracting synthesis results which covered all periods from inception to January 1st 2022. Execution of the study involved screening 135 studies before including 31 of them as final research inputs. Support vector machine represented 42% of all implemented AI techniques while K-nearest neighbor and regression models held respective shares of 26% and 23%.[5]**.**

This paper establishes both an analytical framework for PCOS diagnostic research and a detailed detection features taxonomy which groups together 110 features within eight categories for the first time ever. The industry experts have approved this developed taxonomy. We use the developed taxonomy to evaluate current intelligent detection tools and publicly accessible datasets. The 12 publicly available datasets analyze a 52% coverage rate against the total 110 known features while showing incomplete multimodal datasets and outdated information and unclear licenses [6]**.** Researchers examined clinical effects between patients who got customized homeopathic medicine treatments versus those following standard medical practices. The outcomes showed that individualized homeopathic therapy gave substantial improvements to menstrual function alongside hormone balance and body mass index together with patient well-being ratings [7]**.**

study used narrative interviews that underwent reflexive thematic analysis according to Braun and Clarke (2006, 2019) for data examination. The researcher experienced limited variations in study responses and experiences because all participants were women with both education and high-income backgrounds. The study provides essential information for developing multiple interventions that aid women who have PCOS/PCOD[8]**.**

Polycystic Ovary Syndrome (PCOS) represents an endocrinal condition that affects females within the age category of 12 to 45 years. PCOS results in a loss of menstrual periods while it causes weight gain then promotes darker skin patches and leads to extra body hair growth together with thinner hair density [9]**.** The principal origins of PCOD (polycystic ovarian disease) stem from genetic history along with hormonal body chemical imbalances. This research assesses the effectiveness of Pulsatilla Nigricans as a homoeopathic medication for treating hypothyroidism with Pcod based on prescribing directions from homoeopathic doctors [10]**.** The principal origins of PCOD (polycystic ovarian disease) stem from genetic history along with hormonal body chemical imbalances. This study determines how effective Pulsatilla Nigricans proves as a homoeopathic remedy in hypothyroidism and Pcod treatments according to homoeopathic medical prescriptions. The detailed examination of Pulsatilla Nigricans treatment yielded enhanced health results and superior overall well-being for selected five patients[11]**.** Polycystic Ovary Syndrome (PCOS), pathophysiology, diagnosis, prevention, obstetrical complications, offspring health, clinical management, microbiomes[12]**.**

According to divine creation the woman represents the most beautiful and complex design of human nature. A girl completes life transformations into a woman upon becoming pregnant and giving birth. The reproductive system faces higher risks of medical problems for females than for males. POLYCYSTIC OVARIAN DISEASE (PCOD) stands as one of the diseases that affects women. Medical research has labeled the condition PCOD [13]**.** The research demonstrates that machine learning systems can address complicated healthcare needs by diagnosing PCOS and PCOD early as well as differentiating cases between them. Machine learning detection of these conditions at an earlier stage enables healthcare teams to schedule timely treatments which might stop diseases like infertility and the development of cardiovascular issues and metabolic conditions[14]**.**

The primary goal of this research was to evaluate the outcomes of a structured teaching approach on polycystic ovarian syndrome knowledge acquisition among nursing students. The Investigators Conducted A Research To Measure The Effect Of Structured Education About Polycystic Ovarian Syndrome On The Knowledge Of Nursing Students Across Selected Metropolitan Nursing Colleges[15]**.**The analysis uses Twitter data tagged with #MeToo between 2017 and 2020 totaling 1,15,575 tweets sourced from Data World and Twitter Scraper implemented with Python along with the Text Blob tool for sentiment analysis. The analytical system integrates Support Vector Machine and Naive Bayes and Logistic Regression and Random Forest Classifier to achieve efficient sentiment analysis[16].

The paper reviews recent NLP trends consisting of prompt engineering alongside large language model fine-tuning and AI-powered NLP ethical practices. The study brings together recent developments with the aim of developing future outlooks regarding ML applications in NLP for various real-world industries and purposes. [17]**.**This study employed a generalized linear model to understand the main contributors to poor pregnancy results in PCOS patients along with their influence through risk ratio (RR) measurements at 95% confidence intervals. Random forest demonstrated the optimal prediction capabilities in assessing gestational diabetes because it achieved an area under the curve value of 0.782 (AUROC) followed by fetal macrosomia detection with AUC value 0.897 and preterm birth identification with AUC score 0.901 in PCOS patients00 [18]**.**Ovulatory disruption is the primary reversible cause of infertility, which affects 12-24% of couples. The FDA's first-line recommendation for ovulation induction in such cases is clomiphene citrate[19]**.** The study included 100 women aged 18-38 years diagnosed with PCOS based on Rotterdam criteria over a six-month period from October 2023 to March 2024. Data was collected through questionnaires and medical records, analyzing parameters including age distribution, weight changes, menstrual patterns, and clinical manifestations. Results showed that 52% of patients were aged 18-23 years, with 64% experiencing weight gain after PCOS diagnosis [20]**.**

Methodology

Study Design

This prospective observational study was conducted at Chandigarh group of college, Landran, Mohali, Punjab India, over a 15 days period from 25 February 2025 to 10 March 2025 through google forms.

Sample Size and Selection

A total of 10 females diagnosed with PCOS and 22 females diagnosed with Pcod from total of 251 females from the college as well as other areas. The form circulated over various age group and field of women.

ISSN: 2278-4632
Vol-15, Issue-04, No.02, April: 2025

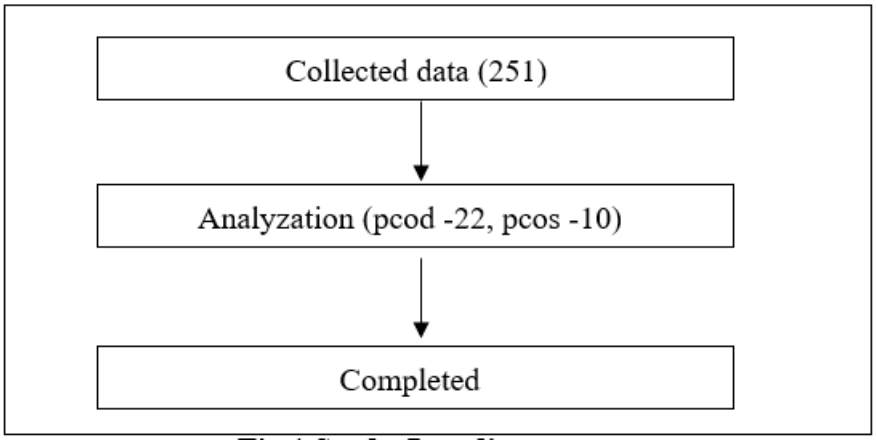


Fig 1 Study flow diagram

Data Collection Method

The data collected by google forms consists of a Questionnaire related women periods health to get the desired data. The form circulated in all the groups of college as well as the templates and qr codes.

Table 1 Questionnaire form

S. No	Questions	Options
1	Age	
2	Do you have any periods related problem?	Pcod, pcos, no, Other
3	Have you gone through technical tests or diagnosed pcod or pcos?	technical test, diagnosed by doctor, no, Other
4	Which of these problems are occurred in your periods?	irregular periods, absent periods, delayed periods, no, Other
5	How often do your periods delayed?	less than a week,10 to 15 days, 15 to 20 days, no, Other
6	How often are your periods missed/absent?	1 month, 2months, 3 months, No, Other
7	What is your period cycle?	28 days, 21 to 35 days, less than 21 days, more than 35 days, Other
8	What is your bleeding cycle?	2 to 7 days, more than 7 days, less than 2 days
9	Is your bleeding?	Heavy, light, normal
10	Do you have painful periods?	Painful, pain-free
11	Which of these changes or problems you face around periods?	unwanted hair growth, weight gain, discomfort in breast, mood swings, darken skin patches, acne, hair loss, hair thinning, anxiety /depression, infertility/pregnancy issues, no, Other
12	What medications you are having?	Allopathy, Homeopathy, Ayurveda, no, Other

The questionnaire form in table 1 investigates menstrual health through multiple-choice options as part of 12 questions. The assessment includes information about patient age together with period-obstetrical complications and medical history and abnormal menstrual types. The questionnaire includes questions about delayed periods and missed menstrual periods as well as questions about cycle length and bleeding patterns and pain levels. The assessment includes questions about physical and emotional menstrual changes that monitor mood swings together with acne problems and weight changes and

ISSN: 2278-4632
Vol-15, Issue-04, No.02, April: 2025

anxiety symptoms. The final set of data includes information about what medicines respondents take with allopathy, homeopathy and Ayurveda among them.

Results And Discussion

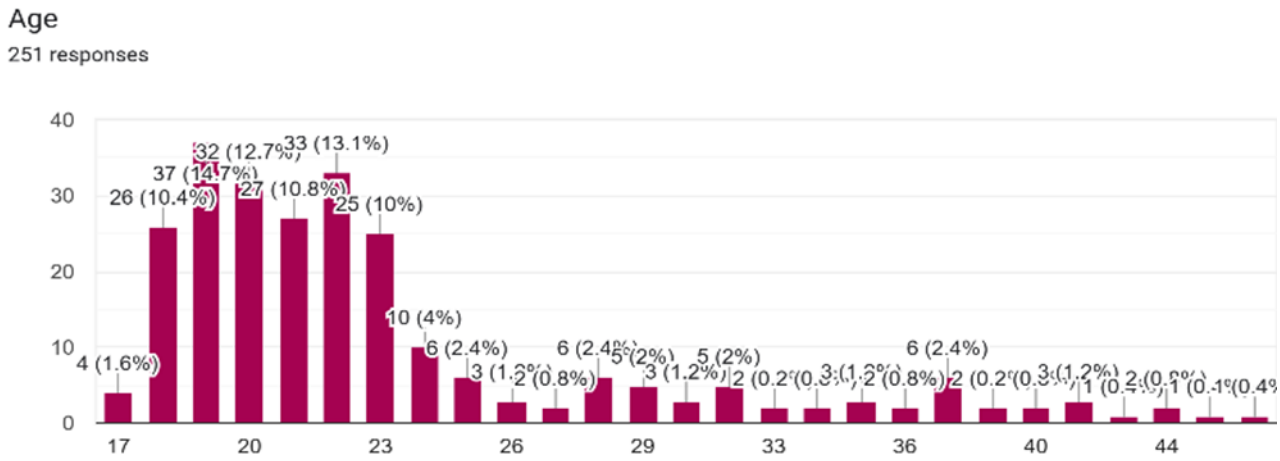


Fig: 2 Age Variations

The age group distribution of 251 respondents appears in the bar chart figure 1. The research demonstrates that 14.7% of participants were 19 years old and 13.1% were 21 years old during the study period with most individuals belonging to the 18-23 age group. Only a limited number of participants continue their engagement after turning 23 years old as age distributions diminish from this point until 44 years old. The age demographic containing the least number of respondents comprises those aged 17 since it includes only 4 individuals who contribute to 1.6% of the survey total. A total of six respondents at each age point of 26, 29 and 36 make up the minimal spikes or increases among the population (2.4%). Most respondents within the study belong to young adult categories according to the graphical representation.

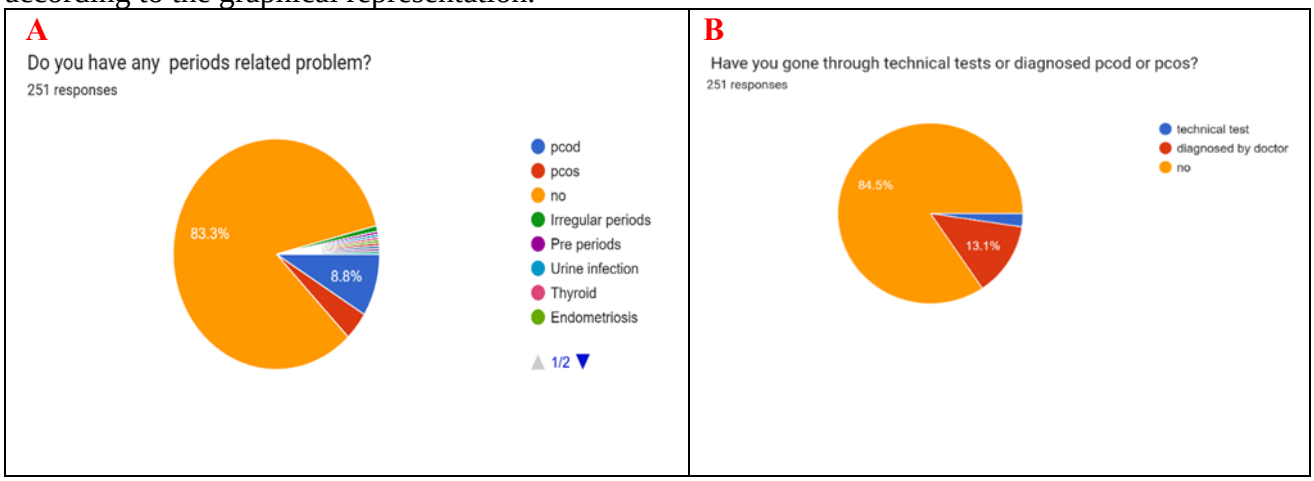
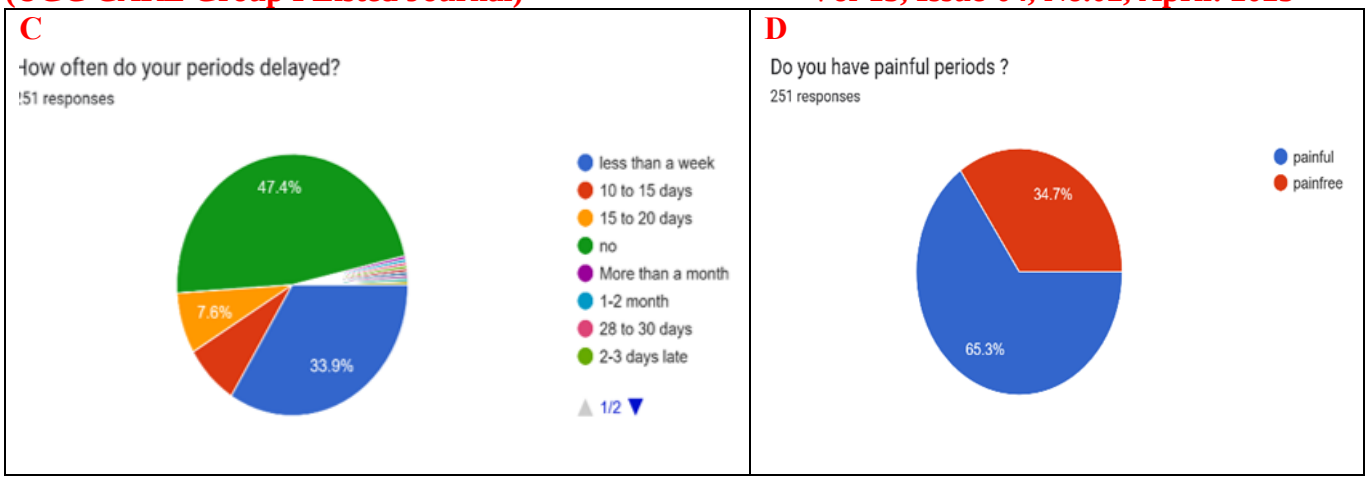


Fig: 3(A, B) Periods problems and diagnosis

A total of 251 people responded to the period-related problem survey in the pie chart Fig 3(A). Most respondents (83.3%) experienced no period problems yet 8.8% had PCOD. The remaining small part of responses consists of PCOS at 4% followed by irregular periods at 0.8%, pre-period symptoms at 0.4%, urinary infections at 0.4%, thyroid problems at 0.4%, and endometriosis at 0.4%. A legend using colors groups the different response types to help viewers understand the information.

The pie chart Fig 3(B) shows that 251 respondents answered whether they have experienced PCOD/PCOS testing or diagnosis. 84.5% of the people involved did not have medical tests or diagnostics performed. Doctor diagnosis reached about 13.1% of women who tested, and medical evaluations came to 2.4% of women. The response categories have clear distinction through the use of different color codes.

ISSN: 2278-4632
Vol-15, Issue-04, No.02, April: 2025



through Fig 4 (C) which shows data from 251 participants. Most of the subjects (47.4%) stated that their menstrual periods occurred as regularly scheduled but 33.9% reported delays shorter than one week. Among the 251 participants only 7.6 percent reported waiting for 10 to 15 days before their period arrived while less than 8 percent had to endure longer waiting times. Additional delay durations apart from these groups exist among the remaining responses ranging from longer than one month to a 1–2-month period and other occasional instances.

Fig 4(D) shows that out of 251 survey participants 65.3% felt pain during their periods. A total of 65.3% of participants said they experience menstrual pain yet 34.7% among them do not report pain during menstruation. The visual representation utilizes blue for painful responses and red for pain-free responses. The data demonstrates that menstrual pain affects most participants.

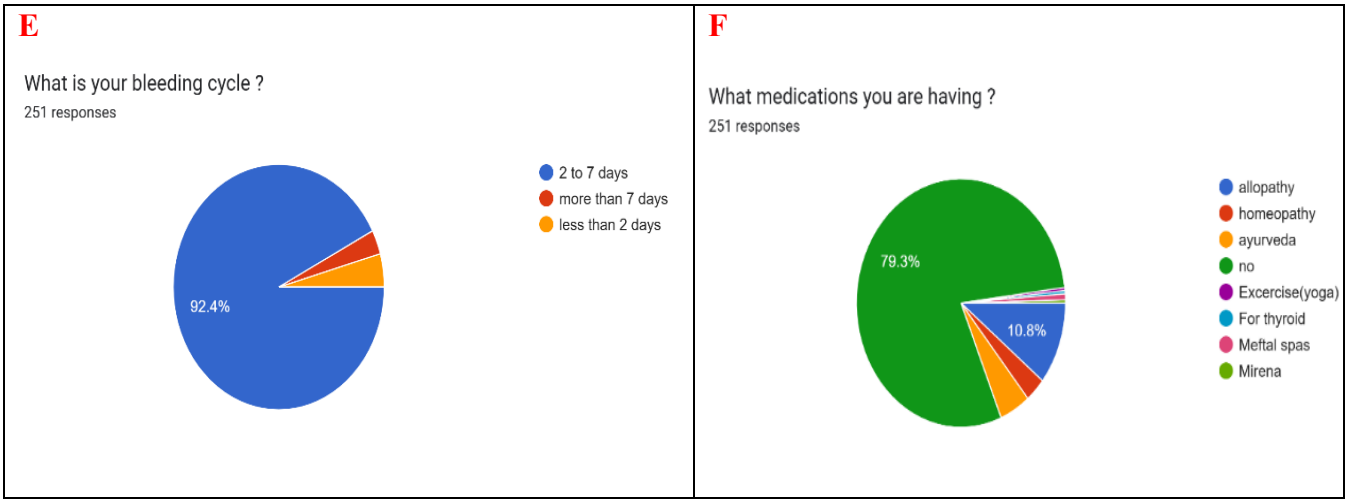


Fig: 5(E, F) Bleeding cycle and medication

A total of 251 people participated in providing information about their menstrual bleeding cycle lengths through the pie chart fig 5 (E). Most women revealed they experienced a regular bleeding period that lasted between 2 to 7 days according to the survey results (92.4%). Less than 4.4% of individuals experience menstrual bleeding periods shorter than 2 days yet 3.2% of women bleed longer than 7 days. The chart employs blue, red and orange colors which help people easily understand the categorized responses.

A total of 251 subjects shared their medication use through the pie chart fig 5 (F). Seventy-nine point three percent of participants replied that they refrain from medication use and among them 10.8 percent utilize allopathic remedies. The population uses either homeopathy (3.2%) or Ayurvedic medicine (4.8%) and seeks other methods including exercise (0.4%) and thyroid medication (0.4%), Meftal Spas (0.8%), and Mirena (0.4%). The different colored categories of responses are displayed clearly through the graphical representation.

ISSN: 2278-4632
Vol-15, Issue-04, No.02, April: 2025

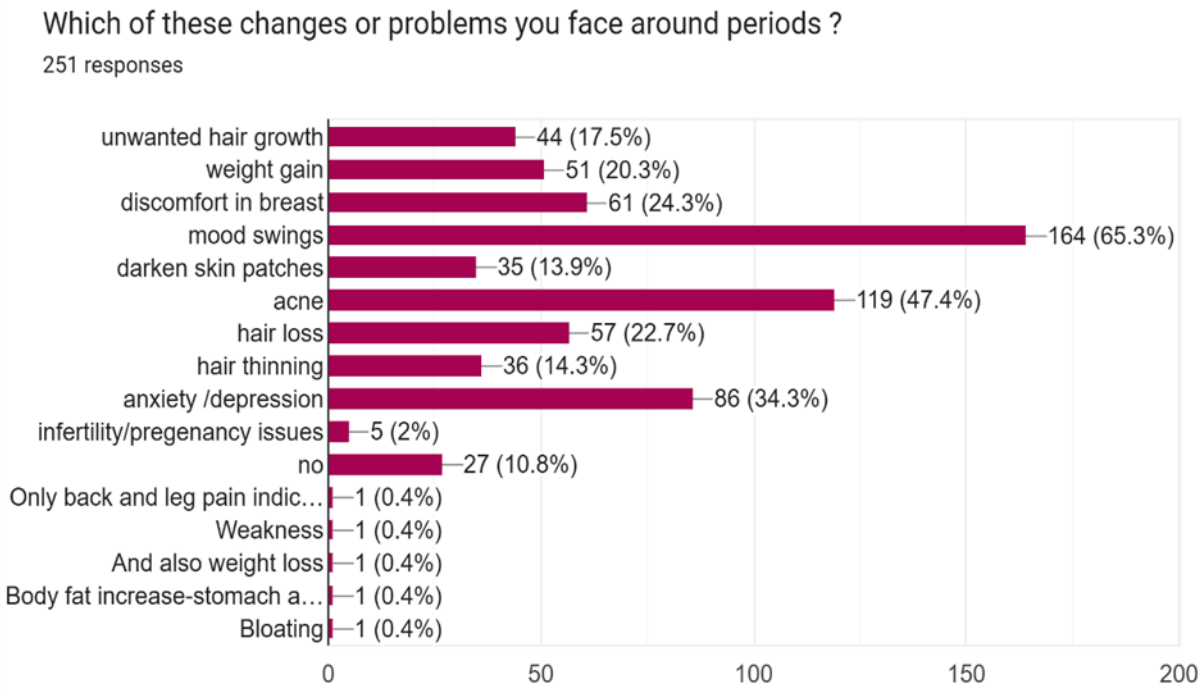


Fig: 6 Symptoms

A bar chart (Fig 6) depicts the changes and problems related to menstrual cycles suffered by 251 study participants. Mood swings proved to be the biggest challenge since it affected 164 participants (65.3%), while the second common issue was acne that affected 119 respondents (47.4%). Researchers learned that 86 women (34.3%) experience anxiety as well as depression symptoms. Petty discomfort in the breasts and hair loss and weight gain remain among the key problems after menstruation. A smaller number of girls experience three matters among unwanted hair growth (17.5%), darkened skin patches (13.9%), and hair thinning (14.3%). Pregnancy-related issues create problems for 2% of menstruators and no problems exist among 10.8% of women. The survey revealed issues such as bloating as well as weakness together with leg pain. The visual presentation tracks the most prevalent physical and emotional problems females encounter at their menstrual cycle.

Discussion

The study consists of responses from 251 participants who offer crucial information about menstrual health concerns. Most of the survey participants fall within the 20-21 years age bracket during their early twenties. Period-related difficulties affected 83.3% of the surveyed population where PCOS stood as the main problem. The study showed high levels of undiagnosed menstrual hesitations since 84.5% of the participants had not sought medical testing but mere 13.1% received a formal diagnosis. This demonstrates insufficient medical surveillance regarding menstrual health.

The survey showed delayed menstruation as a regular occurrence as 47.4% of women did not experience delays but 33.9% had intervals less than a week and 7.6% experienced delays for 10 to 15 days. Research findings show painful menstrual symptoms exist in 65.3% of women thus indicating the importance of better management approaches for period pain. Most women (92.4%) experienced regular menstrual bleeding which lasted 2 to 7 days but some women bled for times beyond seven days.

A significant majority of 79.3% of the participants did not receive medication as well as 10.8% who followed allopathic treatment. Few people used Ayurveda in combination with homeopathy as alternative medical options. Hormonal imbalances among young females became evident through symptoms including mood swings reported by a high 65.3% of respondents and acne, anxiety/depression, and weight gain appeared in 47.4%, 34.3% and 20.3% respectively.

The study evidence demonstrates that raising awareness combined with medical help and changes to exercise and diet patterns are needed to deal effectively with menstrual health problems.

Conclusion

The survey results indicate that menstrual health issues are widespread, yet many individuals remain undiagnosed or untreated. The high prevalence of PCOD/PCOS symptoms and irregular cycles highlights the need for increased awareness, medical consultation, and proactive health management. Furthermore, menstrual pain and emotional challenges, such as mood swings and anxiety, are significant concerns that require better coping mechanisms. Most respondents fall between the ages of 18-23, with peak participation at 19 (14.7%) and 21 (13.1%). 83.3% reported having menstrual health concerns, with PCOD (8.8%) and PCOS (4%) being the most common. However, a significant 84.5% had never undergone tests for diagnosis. While 47.4% reported regular cycles, 33.9% experienced short delays (less than a week), and 7.6% faced delays of 10-15 days. 65.3% of respondents reported experiencing painful periods, indicating the need for better pain management strategies. 92.4% of respondents had a normal bleeding duration (2-7 days), but 3.2% experienced prolonged bleeding (more than 7 days). A significant majority (79.3%) did not take any medication. Among those who did, 10.8% relied on allopathy, while Ayurveda (4.8%) and homeopathy (3.2%) had fewer takers.

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