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Knowledge, Perceptions, Awareness, and Incidence of Cognitive Health Issues among Undergraduates at Risk for Polycystic Ovarian Disease (PCOD)

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ABSTRACT

INTRODUCTION: Polycystic ovarian disorder is the most common endocrine disorder seen in women of reproductive age. Since emotions are largely influenced by hormonal activity, this imbalance in hormone levels can significantly impact mental health. Young women with PCOD can have body image and self-esteem issues due to difficulty in losing weight and excess facial hair growth. Not only that but irregular menstrual cycles and fertility changes can cause them to have chronic high stress levels and anxiety.

MATERIAL & METHOD: An online structured questionnaire was created to collect data from 123 medical UG students of batch 2023 of various medical colleges.

RESULTS: Most participants began menstruating between ages 12 and 14, with a majority tracking their menstrual cycles and being informed about PCOD. While 90% of participants experience dysmenorrhea, only a small proportion take medication regularly for it. The majority sleep 6-8 hours daily, though some report irregular or insufficient sleep, indicating a need for better sleep hygiene. Stress levels are moderate for most, with a significant number experiencing anxiety, particularly related to academic pressures. Dietary habits show a reliance on fast food, with 52% consuming it 2-4 times weekly, which may contribute to weight management difficulties for some participants.

CONCLUSION: These findings suggest the importance of targeted interventions, including stress management, improved sleep hygiene, and healthier eating habits, to enhance the overall well-being and quality of life for young women, particularly concerning reproductive health and academic pressures.

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INTRODUCTION

Polycystic Ovarian Disease is a common condition affecting young women. This disorder occurs when hormonal imbalances cause the ovaries to produce immature eggs, which can lead to a variety of challenges, including increased androgen levels in the body, trouble conceiving, and weight gain. [1] [2]

PCOD can have a huge impact on mental health, and it's not just about physical symptoms. It's the combination of hormonal imbalances, weight struggles, and the emotional ups and downs that can take a toll. On top of that, dealing with things like acne, excess hair growth, and irregular periods can be frustrating. It's no wonder many women feel overwhelmed, especially with all the stress and pressure from society to look or feel a certain way.[3]

Anxiety The feeling of fear that creeps in when we're stressed or facing something uncertain. While a little anxiety can be normal, especially during big life events, it can become a problem if it's overwhelming or sticks around for too long. Also, during the follicular phase, women with PCOD may experience altered hormonal responses, potentially disrupting estrogen balance and affecting emotional states. These hormonal imbalances may lead to increased anxiety compared to those without PCOD. [4] [5]

Sleep disorders in women with PCOD are linked to hormonal imbalances. These factors can lead to conditions like insomnia and obstructive sleep apnea. Additionally, obesity, common in PCOD, aggravates sleep disturbances. The interplay of these elements significantly impacts mental health, quality of life, and overall well-being. [6]

Depression puts women with PCOD at significant risk, largely due to the inter-roleplay of several stress factors. Additionally, fertility challenges heighten feelings of inadequacy, contributing to depressive symptoms. The chronic nature of PCOD means that managing its symptoms can be an ongoing source of stress, leading to a cycle where depression amplifies physical health issues and vice versa. This dual challenge makes it crucial to prioritize mental health in treatment plans. [4] [7]

Eating disorders may develop in women with PCOD, such as binge eating disorder or bulimia, often as a response to body image issues and frustrations with weight management. These behaviors can serve as coping mechanisms to navigate the emotional turmoil of physical symptoms. Emotional eating can be triggered by depression or stress associated with living with PCOD. [8]

Study design: Cross-sectional study

Study Period: September 2024 to November 2024

Sample size: Young women studying MBBS aged 18 to 23 were enrolled.

Study tools and Data collection procedure: A questionnaire on common mental and physical health issues from PCOD was created and shared with participants. The form had questions related to the menstrual cycle, sleeping and eating patterns, hair fall issues, age of menarche, and stress levels.

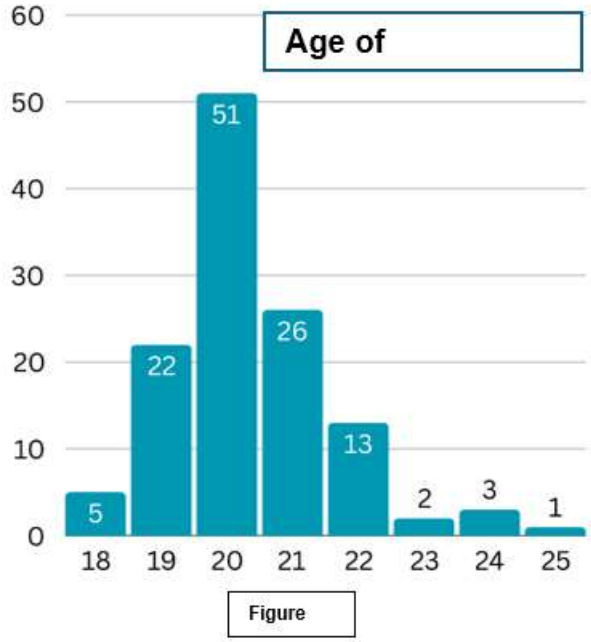
Data Analysis: Subjects are compared in terms of age, history of weight loss issues, age of menarche, period cramps, presence of acne, hirsutism, duration of sleep and stress levels. Descriptive statistics, such as percentages, will then be calculated to summarize the data. The analysis will provide rich insights into PCOD among the participants.

MATERIALS & METHODS

RESULTS

- **Demographic analysis:**

The dataset offers an interesting glimpse into the characteristics of 123 participants aged between 18 and 25 from the 2023 batch. Among them, the 20-year-old age group stands out, with 51 participants. [Figure 1.1]



Figure

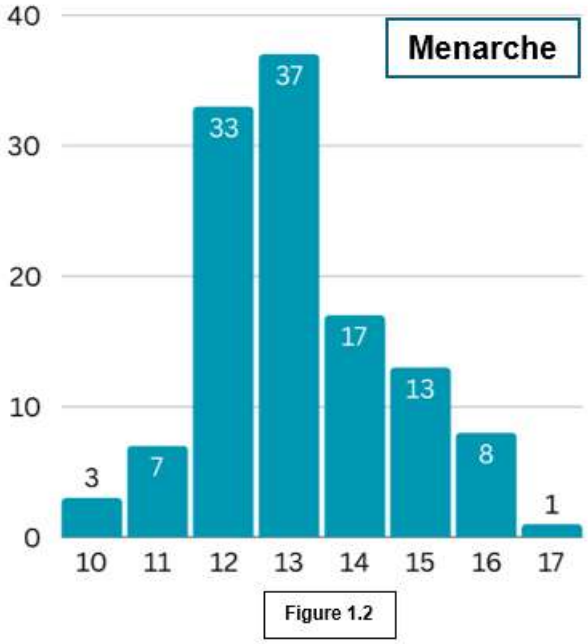


Figure 1.2

Shifting the focus to developmental milestones, the onset of menarche (first menstrual cycle) reveals that most participants began at 13, with 37 reporting this. At the same time, 33 experienced it slightly earlier, at age 12 [Figure 1.2].

Together, these figures highlight that most participants started menstruating between ages 12 and 14 and are now in their early twenties.

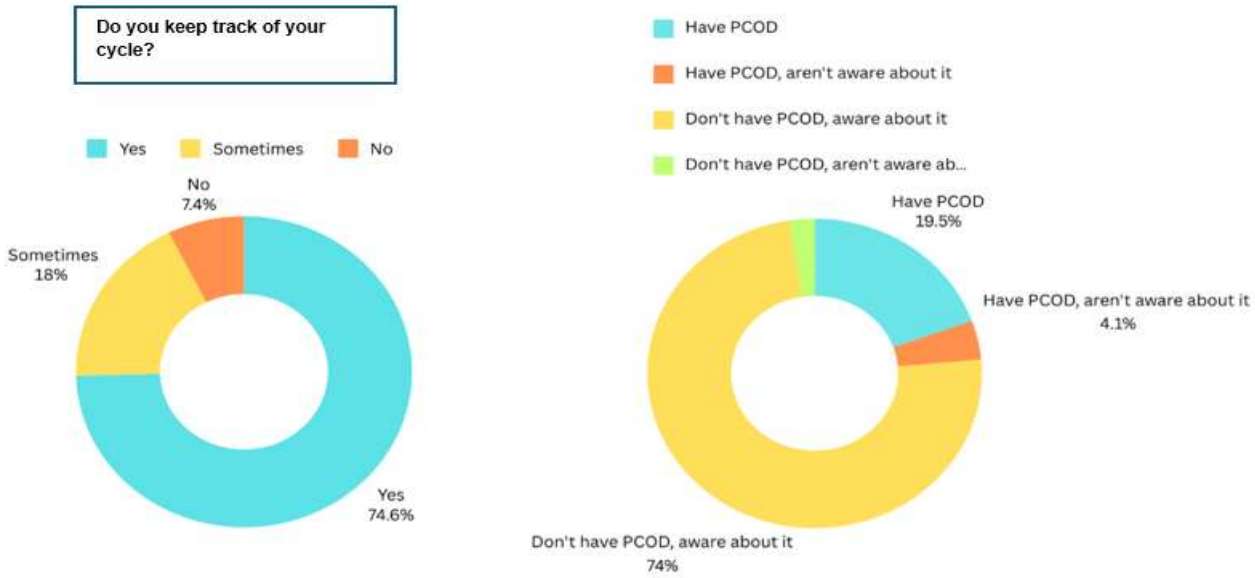


Figure 1.3

A noteworthy positive takeaway is that, out of all 123 participants, an impressive **92 girls actively and regularly track their menstrual cycles**. It's encouraging to see that the majority of participants 91 out of 123 are well-informed about PCOD. Interestingly, only 24 participants have been diagnosed with it, showing a good balance of awareness and proactive healthmanagement in the group. [Figure 1.3]

- **Menstrual cycle evaluation**
  Most
  Individuals have a standard cycle length, but notable portions experience shorter or longer durations, highlighting variability, with the majority (48.8% or 60) falling within the typical range of 24 to 34 days. The data reveals that 99 participants experience medium blood flow, making it the most common category. Notably, none of the participants reported spotting, while 18 participants experienced heavy flow. This highlights that the **majority fall within the medium-flow range.** The dataset also tells us that dysmenorrhea [cramps] is a prevalent experience for most participants, affecting over 90% of the group [figure 1.4].

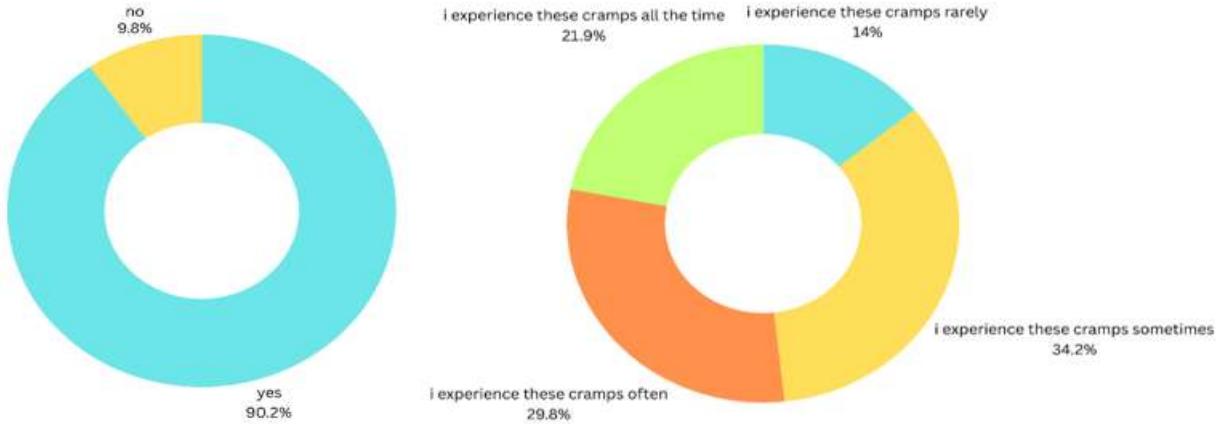


Figure 1.4

Out of all the participants who experience dysmenorrhea, only 19 of them take medication for it regularly and 34 take it sometimes.Out of the total participants, 72 (58.5%) reported visiting a gynecologist for irregular menstrual cycles. Among these 72 individuals, 36% were prescribed medication to address the irregularity. However, only 12% of those prescribed medication adhere to taking it regularly, highlighting a notable gap in consistent medical compliance.

➢ **Analysis of Sleep, Stress, and Anxiety Levels**

Most participants reported sleeping 6–8 hours daily, aligning with the recommended sleep guidelines for maintaining overall health and well-being [Figure 1.5]. However, many respondents either sleep less than 6 hours or report irregular sleep patterns, raising concerns about sleep quality. These patterns could have adverse effects on cognitive functioning, productivity, and long-term health.

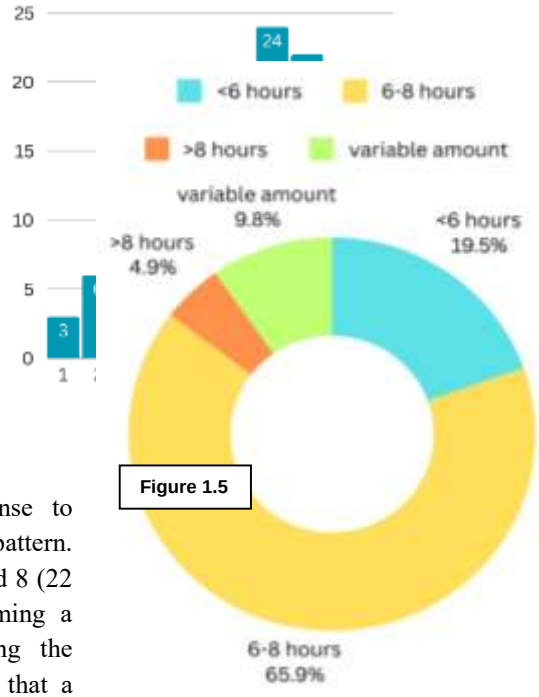


Figure 1.5

The highest number of students reported stress levels of **5 and 6**, with 32 and 31 students, respectively. This suggests that a significant portion of students experience **moderate to high stress** regularly. [figure 1.6]

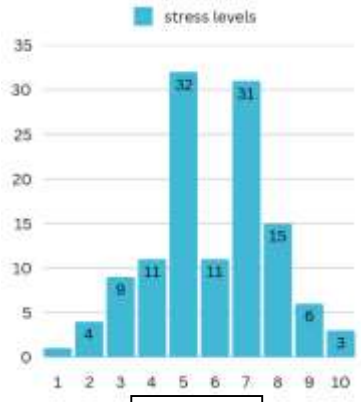


Figure 1.6

Anxiety levels, particularly in response to academic stress, reveal a concerning pattern. Anxiety scores of 7 (24 participants) and 8 (22 participants) are most prominent, forming a cluster alongside level 9, representing the majority of responses. This highlights that a significant number of participants experience higher-than-average anxiety in academic settings, underscoring the pervasive nature of academic stress. By contrast, only a small fraction of participants report minimal anxiety (1–3) in such situations, suggesting that most respondents face considerable challenges in managing academic-related pressure. [Figure 1.7]

➢ Eating habits and weight issues

Figure 1.7

A majority (52%) consume fast food 2–4 times weekly, while 10.6% eat it daily. In contrast, 34.1% primarily eat nutritious food, and only 3.3% exclusively consume nutritious meals. Additionally, 53 participants report difficulty losing weight, whereas the majority, 70 participants, do not face such challenges. [Figure 1.8]

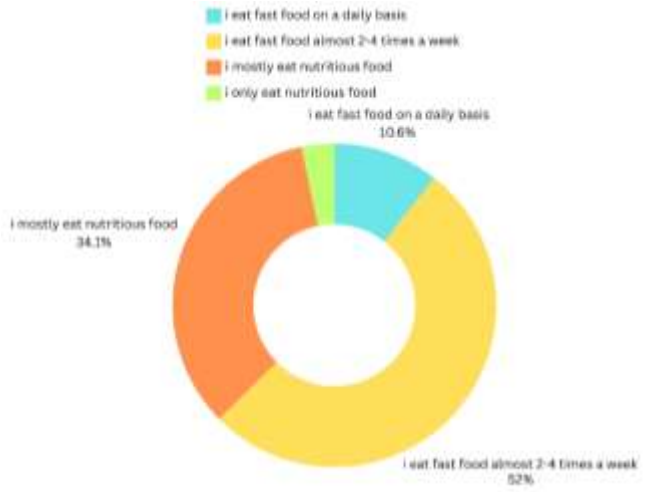


Figure 1.8

DISCUSSION

One of the research's most encouraging findings is that most participants (91) actively track their menstrual cycles. This level of engagement reflects increasing awareness about reproductive health, a positive trend also observed in studies like Sharma et al. (2021). [5]

The data also reveals that, majority of the participants (91) are well-informed about PCOD, with only 24 participants diagnosed with the condition. This finding mirrors the prevalence trends reported in Bharali et al. (2022), who observed a PCOD prevalence rate of approximately 8%–13% in India. [6,7]. A significant portion of participants (48.8%) reported a cycle length within the typical range of 24 to 34 days, consistent with findings in the Apple Women's Health Study by Li et al. (2023).

Situmorang et al. (2024), which highlight that primary dysmenorrhea is a pervasive issue among young women globally. Despite its high prevalence, only 19 participants take medication for dysmenorrhea regularly, while 34 take it occasionally. This indicates that many individuals may either lack access to adequate treatment or choose to manage their symptoms without medication. Dixon et al. (2024) emphasize

the importance of addressing dysmenorrhea in community health settings to ensure better management strategies and support. [4,5]

Healthcare-seeking behavior for menstrual irregularities is notable among the participants, with 58.5% (72 individuals) having visited a gynecologist. However, adherence to prescribed medication is low; only 12% of those prescribed medication for menstrual irregularities take it regularly. This finding echoes patterns seen in the study by Mussa et al. (2024), which highlights gaps in compliance and underscores the need for patient education and follow-up to ensure effective treatment. [21]

Most participants reported sleeping 6–8 hours daily, aligning with recommendations by global health authorities for optimal physical and cognitive functioning. However, a subset of participants reported either sleeping less than six hours or experiencing irregular sleep patterns. Such disturbances, as documented by Moran et al. (2015), are associated with long-term risks, including impaired cognitive function, mood disturbances, and metabolic health challenges. [10] Irregular or insufficient sleep patterns have broader implications, particularly in populations prone to stress or conditions like PCOD. Basu et al. (2018) found that chronic stress and poor sleep quality in women with PCOS exacerbate hormonal imbalances and metabolic complications. [11]

High anxiety levels are consistent with findings by Cooney et al. (2017), who observed that populations prone to stress and hormonal dysregulation. While this dataset does not directly correlate anxiety with medical conditions, the prominence of high scores reflects the pervasive nature of academic-related stress. [12] By contrast, only a small fraction of participants reported minimal anxiety, indicating that the majority of respondents face considerable challenges in managing academic pressures. These findings echo the need for targeted mental health resources, as highlighted by Asik et al. (2015), who found a strong association between academic or work-related stress and increased anxiety and depressive symptoms. [13]

Panidis et al. (2013) emphasized the importance of lifestyle interventions, including dietary modifications and anti-obesity therapies, in addressing weight-related challenges and improving metabolic health. The interplay between poor diet and metabolic dysfunction is also evident in populations with hormonal imbalances, such as those with PCOD, where nutritional imbalances exacerbate metabolic and reproductive issues. [14]

CONCLUSION

This study offers valuable insights into the health and lifestyle patterns of young women aged 18-25, revealing both positive trends and areas requiring attention. Many participants exhibit good awareness of reproductive health, with many tracking their menstrual cycles and being informed about PCOD.

However, high rates of dysmenorrhea, stress, anxiety, and irregular sleep patterns highlight ongoing challenges that impact overall well-being. These findings underscore the importance of addressing both physical and mental health concerns through targeted interventions, including stress management strategies, improved sleep hygiene, and promoting healthier eating behaviors. By focusing on these areas, it is possible to enhance the overall health and quality of life for young women, particularly those navigating the complexities of reproductive health and academic pressures.

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