

Depression, Anxiety, Stress, Emotional Regulation and Quality of Life in Women with Polycystic Ovary Syndrome: A Qualitative and Quantitative Study

Thesis submitted

In the partial fulfilment of the requirement for the degree of

**MASTER OF ARTS
IN PSYCHOLOGY
(Clinical)**

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Under The Guidance Of: Prof. (Dr.) Sohinee Ganguly

**Thapar School of Liberal Art and Sciences
THAPAR UNIVERSITY, PATIALA-**

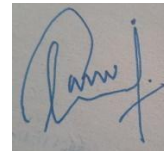


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CERTIFICATE

This is certify that the thesis entitled “**Depression, Anxiety, Stress, Emotional Regulation and Quality of Life in Women with Polycystic Ovary Syndrome: A Qualitative and Quantitative Study**” being submitted in partial fulfilment of requirements for the award of degree of **Master of Arts in Psychology, submitted in the Thapar School of Liberal Art and Sciences, Patiala** is a bonafide work carried out under the supervision of Dr. Sohinee Ganguly, Professor and that no part of this project has been submitted for the award of any other degree.



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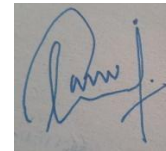


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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, “**Depression, Anxiety, Stress, Emotional Regulation and Quality of Life in Women with Polycystic Ovary Syndrome: A Qualitative and Quantitative Study**” in partial fulfilment of the requirement for the award of Degree of **Master of Arts in Psychology**, submitted in the **Thapar School of Liberal Art and Sciences**, Patiala, is an authentic record of my own work carried out under the supervision and guidance of Dr. Sohinee Ganguly, and refers other researcher's work which are duly listed in the reference section.

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ABSTRACT

This mixed methods research aimed to examine the occurrence of depression, anxiety, and stress among women with and without Polycystic Ovary Syndrome (PCOS) while also exploring their quality of life and emotional regulation. The study employed a concurrent transformative mixed methods design, collecting and analysing quantitative and qualitative data. For the quantitative study, a purposive sampling technique was employed to select a sample of 140 participants, consisting of 70 individuals with PCOS/PCOD and 70 individuals without the condition. The collection of quantitative data was conducted by administering an online survey utilizing measurement tools such as the Emotional Regulation Questionnaire (ERQ), Quality of Life Scale (QOLS-16), and Depression, Anxiety, and Stress Scale (DASS-21). Descriptive statistics and an independent t-test were used for data analysis. The results indicated significantly higher levels of stress, anxiety, and depression among women with PCOS, along with a lower quality of life compared to women without the condition. However, no significant differences were found in emotional regulation between the two groups. Qualitative data were gathered by conducting semi-structured interviews with 15 participants diagnosed with PCOS. Thematic analysis using the Delve Qualitative Tool revealed the experiences of women living with PCOS, highlighting the impact on relationships, social well-being, healthcare limitations, and psychological aspects. It emphasizes the need for comprehensive care, including support, awareness, and education sessions. The research emphasizes the significance of addressing the mind-body connection and promoting overall well-being for women with PCOS.

Keywords: *Polycystic Ovary Syndrome (PCOS), mental health, well-being, mixed methods, depression, anxiety, stress, quality of life, emotional regulation.*

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CHAPTER 1

INTRODUCTIO

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1.1 Women's Mental Health

"Mental health" encompasses two primary aspects: an individual's mental and emotional well-being and the absence of a mental illness (World Health Organization, 2001). However, positive psychology and holism argue that mental health extends beyond the mere absence of mental illness. It also entails cultivating happiness, achieving balance in life, and developing psychological resilience (Keyes, 2005). On the other hand, the terms "mental disorder" or "mental illness" refers to involuntary patterns of thoughts or behaviors that cause distress or impairment and deviate from the norms of typical development or cultural expectations (American Psychiatric Association, 2013). The impact of gender on health determinants, such as economic status, social standing, and access to resources, has been extensively studied (Kabeer, 1999). Gender is critical in shaping individuals' symbolic and material positions in the social hierarchy, influencing their experiences and overall well-being (Connell, 2012). Various other factors, including age, family structure, income, education, social support, and a range of behaviors, further influence the significant influence of gender on health. India, as a predominantly male-centric society with a hierarchical structure that places patriarchy at the apex of the gender cycle, exemplifies the profound influence of gender on health determinants (Kabeer, 1999). In such contexts, gender disparities can impact individuals' access to healthcare, resources, and opportunities, leading to health inequalities.

A person's mental health and susceptibility to mental illness are significantly influenced by gender. Despite extensive research on the adverse outcomes of mental illness, there has been insufficient emphasis on identifying and understanding gender-specific factors and mechanisms that contribute to maintaining good mental health and resilience in the face of stress and adversity (World Health Organization [WHO], 2001). The WHO recognizes the importance of examining gender-based patterns in psychiatric disorders and psychological distress. Their data reveals that women are more likely to experience symptoms of depression, anxiety, and unspecified psychological pain at a rate two to three times higher than men. Conversely, men are vulnerable to addictions, substance use disorders, and psychopathic personality disorders (WHO, 2001). These findings highlight the critical role of gender affects the progression of psychological disease, including the unique experiences of men and women. The WHO has effectively presented this information, urging a comprehensive understanding of gender dynamics in mental health (WHO, 2001). In the Indian population, the WHO projected a considerable rise in the overall incidence of mental illnesses, estimated to reach 20% by 2020 (WHO, 2001).

However, despite this alarming projection, mental health receives a minimal allocation of the overall health budget, with only 1-2% allocated, unlike other countries that invest 10-12% (Fortis, 2013). Gender differences are evident in the higher incidence of sadness, anxiety, and other prevalent psychological issues and somatic complaints among women compared to men (Pigott, 2002). Women have a twofold increased risk of unipolar depression, projected to become the second most common cause of global disability burden by 2020. Additionally, women with 2-3 times higher lifetime Anxiety-related disorders, including generalized anxiety disorders, are at risk. (Pigott, 2002). These gender-specific patterns underscore the importance of developing tailored interventions and treatment approaches for women's mental health. Although women generally exhibit similar depressive

symptoms to men, they are more likely to experience atypical or "reverse vegetative" symptoms, such as increased appetite and weight gain.

Moreover, women with anxiety disorders often present with more severe symptoms, a higher likelihood of comorbid depression, and a more challenging disease course (Pigott, 2002). Parry (2000) examined the prevalence of common mental illnesses in women and explored potential factors contributing to their increased susceptibility. Hormonal fluctuations associated with the reproductive cycle may contribute to the heightened risk of depression among women. Stressful life events strongly correlate with depression, particularly in more susceptible individuals. Women, in particular, face various life stressors related to childbirth and assuming the caregiving role for sick family members. Limited access to education and employment opportunities also contributes to a sense of disempowerment among women. Even financially stable individuals may experience vulnerability due to social pressures and fears of transgressing social boundaries (Parry, 2000).

1.2 Hormonal Changes in Women

Throughout history, it has been acknowledged that the menstrual cycle can impact a woman's mental state and behaviour. Symptoms such as irritability, tension, anxiety, migraines, sleep disturbances, sadness, dysphoria, and difficulties with concentration are often associated with the premenstrual and menstrual phases (Freeman et al., 2011; O'Brien et al., 2011). Premenstrual dysphoric disorder (PMDD), characterized by severe emotional and behavioural symptoms, is closely linked with the luteal stage of the menstrual period (Halbreich et al., 2003). In addition to the menstrual cycle, mental health issues are commonly observed in the later stages of pregnancy and the postpartum period (O'Hara et al., 1991). Postpartum blues, the mildest form of postpartum illness, affects a significant percentage of new mothers, ranging from 50% to 80% (Beck, 2001). Postpartum depression, on the

contrary, is an illness of greater severity, a depressive episode that typically occurs within six weeks of giving birth (American Psychiatric Association, 2013). Studies conducted in India have shown similar frequencies of depression during pregnancy and postpartum compared to developed countries, but with cultural differences in risk factors (Chandran et al., 2002; Upadhyay et al., 2013). Risk factors associated with postpartum depression have been identified in previous research. These factors include low income, a desire for a male child but giving birth to a daughter, conflicts with in-laws and parents, adverse life events during pregnancy, and a lack of physical assistance (Patel et al., 2002; Upadhyay et al., 2017). These studies have shed light on the various socioeconomic and cultural factors that contribute to the development of postpartum depression. Understanding these risk factors can help healthcare professionals and support systems provide targeted interventions and support to women at higher risk for postpartum depression. The postpartum period can also exacerbate psychiatric symptoms in women with pre-existing mental illnesses (Gavin et al., 2005). Common perinatal disorders, such as depression and anxiety, are prevalent among pregnant and recently-delivered women in low and middle-income countries, with higher risks observed among socially and economically marginalized women (Fisher et al., 2012). Factors contributing to these disorders include discrimination against female infants, limited roles in infant care and household chores, excessive unpaid workloads, and gender-based violence (Rahman et al., 2013). Menopause, a significant change phase for women, affects their reproductive and endocrine systems and has social and psychological implications. The association between menopause and mental health problems, including depression, has been well-established (Freeman et al., 2018; Soares et al., 2016). In a community survey conducted in India, reproductive health risk factors, particularly gynaecological complaints such as dyspareunia and vaginal discharge, were strongly associated with the likelihood of developing common mental disorders (Patel et al., 2006). The study suggested that gynaecological symptoms may serve as bodily equivalents of common mental disorders in women from Asian cultures.

1.3 Polycystic ovary syndrome

Polycystic ovary syndrome is a disorder that impacts females in their reproductive years and is caused by hormonal imbalances. The disorder is characterized by irregular menstrual cycles, hirsutism, and enlarged ovaries with numerous small cysts. Despite the reality that it had not been fully comprehended at the time beginning of the 20th century, two doctors, Stein and Leventhal, published a paper in 1935 that highlighted a series of cases and defined it as a unique medical condition known as "polycystic ovarian disease" (Stein & Leventhal, 1935). The medical community became more aware of PCOS in the following years, and researchers started investigating its causes and possible treatments. The introduction of ultrasound technology in the 1960s and 1970s allowed for a more accurate diagnosis of PCOS, leading to the discovery of its association with metabolic abnormalities like insulin resistance (Diamanti-Kandarakis et al., 2006). By the 1980s and 1990s, PCOS was acknowledged as a standard and significant health concern for women, leading to the establishment of a Consensus Development Conference by the National Institutes of Health in 1990 to promote research and raise awareness (McFarland, 2012). PCOS is a multifaceted disorder marked by high levels of androgens, irregularities in menstrual cycles, and small cysts on one or both ovaries.

The disorder can be morphological (polycystic ovaries) or predominantly biochemical (hyperandrogenemia). Hyperandrogenism, a clinical hallmark of PCOS, can cause inhibition of follicular development, micro cysts in the ovaries, anovulation, and menstrual changes. When women approach healthcare professionals seeking assistance with problems related to infertility, excessive hair growth, obesity, acne, and amenorrhea, they are frequently diagnosed with PCOS. McFarland (2012) noted that the risk of developing endometrial cancer, cardiovascular disease, type-2 diabetes mellitus, and dyslipidemia is higher in women with PCOS. Xita et al. (2002) stated that genetic and

environmental factors interact to cause PCOS. It is a complex disorder where the way it affects people can vary from person to person. This means that people with PCOS can have different symptoms and lab results. Diamanti-Kandarakis et al. (2006) investigated that unhealthy lifestyle habits like bad eating and physical activity can worsen environmental factors linked to PCOS, like obesity. In addition, there is a possibility that toxins and certain infections can contribute to PCOS development. PCOS symptoms affecting reproduction and metabolism can sometimes be reversed through lifestyle changes, including regular exercise and weight loss.

1.3.1 Pathophysiology

The polycystic ovarian syndrome is also referred to as a form of medical disorder that affects the ovaries which, disrupts normal physiological functioning and involves three key aspects: the hypothalamic-pituitary axis, insulin, and the ovaries (Diamanti-Kandarakis & Dunaif, 2012). Although the exact etiology of PCOS remains unclear, it is frequently associated with factors such as obesity and insulin resistance (Diamanti-Kandarakis & Dunaif, 2012). These factors can impair insulin function in the body and lead to excessive production of male hormones by the ovaries, resulting in irregular ovulation (Diamanti-Kandarakis & Dunaif, 2012). The ovaries' failure to produce embryos, known as follicular maturation arrest, is a significant indication of impaired functioning (Diamanti-Kandarakis & Dunaif, 2012). Diagnosis of PCOS relies on the identification of specific symptoms by healthcare professionals. One diagnostic criterion involves elevated levels of luteinizing hormone (LH) and gonadotropin-releasing hormone (GnRH). In contrast, follicular-stimulating hormone (FSH) levels are typically low or remain unchanged (Diamanti-Kandarakis & Dunaif, 2012). This hormonal imbalance stimulates the overproduction of androgens by ovarian cells, contributing to irregular ovulation. However, administering FSH can help restore regular ovulation (Diamanti-Kandarakis & Dunaif,

2012). Research suggests that PCOS may originate during puberty and have a hereditary component (Diamanti-Kandarakis & Dunaif, 2012). Furthermore, approximately 25% of individuals with PCOS experience elevated prolactin levels (Diamanti-Kandarakis & Dunaif, 2012). These findings highlight the multifaceted nature of PCOS and its potential genetic and developmental influences

1.3.2 Clinical Presentation

According to the National Institutes of Health Department of Health and Human Services (2008), Polycystic Ovary Syndrome (PCOS) is associated with various health issues, including female infertility. A spectrum of indications and symptoms identifies PCOS. Firstly, women with PCOS may have enlarged ovaries with numerous small cysts or follicles. This enlargement can contribute to the irregularity or infrequency of menstrual cycles, making it challenging for women to conceive. Additionally, pelvic pain can be experienced by some individuals with PCOS, ranging from mild to severe. PCOS also manifests as hirsutism, abnormal hair growth due to elevated androgen levels. Furthermore, alopecia, characterized by hair loss or thinning, can be associated with PCOS, particularly on the scalp. The condition can also lead to acne, affecting areas such as the face, chest, and back, owing to increased androgen levels. Other potential signs of PCOS include acanthosis nigricans, characterized by dark, thick, velvety patches that typically occur in skin folds like the neck, armpits, or groin area, as well as the presence of skin tags—small, soft, flesh-colored growths—due to insulin resistance. Precise signs and symptoms of PCOS can vary among individuals. signs and symptoms of PCOS can vary among individuals. However, irregular ovulation, elevated androgen levels, and ovarian cysts are commonly observed (National Institutes of Health Department of Health and Human Services, 2008).

1.3.3 Diagnosis

Three primary diagnostic methods can identify Polycystic Ovary Syndrome (PCOS). The initial diagnostic criteria for PCOS were established in 1990 by a group of experts (NIH, 1990). Subsequently, the significance of ovarian morphology was recognized as a crucial factor in diagnosing PCOS during a Rotterdam workshop (ESHRE/ASRM, 2003). It was determined that the NICHD/NIH criteria should include ovarian morphology on pelvic ultrasound (ESHRE/ASRM, 2003). As a result, meeting two out of the three criteria is sufficient for a PCOS diagnosis (ESHRE/ASRM, 2003).

Doctors utilize three criteria for diagnosing Polycystic Ovary Syndrome (PCOS). The first set is the NICHD/NIH (1990), which includes high levels of androgens in the body leading to symptoms like acne, hirsutism, and alopecia; irregular or absent menstrual periods due to lack of ovulation, and ruling out other medical conditions with similar symptoms (NIH, 1990). The second set is the ESHRE/ASRM Rotterdam (2003), which incorporates the criteria from NICHD/NIH along with enlarged ovaries displaying multiple small cysts visible on ultrasound (ESHRE/ASRM, 2003). The third set is the Androgen Excess Society (AES) (2006), which encompasses the criteria from ESHRE/ASRM and also includes ruling out other medical conditions with similar symptoms (AES, 2006). In 2006, the AES recommended modifying the NICHD/NIH using the Rotterdam tool to diagnose PCOS in women (AES, 2006) accurately. According to the Rotterdam criteria, at least two features must be present to diagnose PCOS: hyperandrogenism, oligo-ovulation/anovulation, and polycystic ovaries (AES, 2006). The Rotterdam criteria acknowledge the heterogeneity of PCOS symptoms and the need to exclude similar symptoms from other medical conditions before making a diagnosis (AES, 2006). This approach allows for more personalized management of the condition, improving health outcomes for women with PCOS.

When a woman is suspected of having Polycystic Ovary Syndrome (PCOS), doctors conduct a comprehensive medical examination, including a pelvic ultrasound and blood tests to assess hormone, glucose, and lipid levels, before diagnosing PCOS, excluding other health problems, such as Cushing's syndrome and hyperprolactinemia (AES, 2006). After being diagnosed with PCOS, research has indicated that over 50% of individuals with the condition will develop either prediabetes or diabetes, and PCOS patients are more likely to experience health issues such as heart attacks, hypertension, and other complications including anxiety, depression, and sleep apnea (Moran et al., 2010). Additionally, pregnant women with PCOS have an elevated risk of experiencing miscarriages, gestational diabetes, pre-eclampsia, and giving birth prematurely (Gundersoet al., 2013).

1.4 Mental Health and Polycystic Ovary Syndrome

1.4.1 Depression

Depression is defined by the American Psychological Association (APA) as a state marked by long-lasting feelings of deep sadness or despair, persisting beyond a specific duration of a few days (American Psychological Association, n.d.). Depression can impair a person's ability to carry out daily activities and may manifest in physical symptoms such as changes in weight, sleep disturbances, pain, or fatigue (American Psychological Association, n.d.). Several studies have explored the relationship between Polycystic Ovary Syndrome (PCOS) and depression among women. Research indicates that women diagnosed with PCOS have a higher likelihood of experiencing depression, although the precise nature of this association remains incompletely comprehended. It is speculated that hormonal imbalances and disruptions in metabolism linked to PCOS may play a role in the onset of depression (Himelein & Thatcher, 2006). Physical symptoms such as hirsutism, weight gain, and menstrual irregularities can also contribute to low self-esteem and body image dissatisfaction, further increasing the risk of depression (Himelein & Thatcher, 2006). Several investigations have examined this

complex relationship. Himelein and Thatcher (2006) found that women with PCOS experienced higher levels of depression and body image dissatisfaction. Hollinrake et al. (2007) reported that women with PCOS had a significantly higher risk of depression than those without PCOS. Other studies by Weiner et al. (2004), Elsenbruch et al. (2003), and Cooney et al. (2010) also found associations between PCOS and mood disorders.

1.4.2 Anxiety

Anxiety is an emotional state marked by tension, anxious thoughts, and physiological changes such as elevated blood pressure (American Psychiatric Association, 2013). Individuals with anxiety disorders may experience intrusive and repetitive thoughts or concerns that significantly impact their daily lives. In the context of polycystic ovary syndrome (PCOS), women exhibit dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, leading to increased activity and higher levels of cortisol (Barry et al., 2011). This persistent activation of the body's stress response system may contribute to developing anxiety symptoms in females with PCOS. Moreover, women with PCOS commonly experience chronic low-grade inflammation, a shared characteristic of anxiety and depression (Dokras et al., 2011). This inflammatory response may contribute to the elevated prevalence of anxiety among women with PCOS. The relationship between anxiety and PCOS involves complex biological and psychological mechanisms. While dysregulation of the HPA axis and chronic inflammation is implicated in anxiety among women with PCOS, other factors such as body image concerns and social stressors may also contribute to developing anxiety symptoms (Barry et al., 2011). Many investigations have demonstrated a close relationship between PCOS and anxiety/depression. Rasgon et al. (2003) reported that 44% of women with PCOS had depression, and 37% experienced anxiety, with hirsutism positively correlated with depression severity. Barry et al.'s (2011) meta-analysis, which reviewed 13 studies, found higher levels of anxiety and depression in women with PCOS compared to

those without the condition. Additionally, Dokras et al. 's (2011) systematic review and meta-analysis of 20 studies revealed an increased risk of abnormal depression scores among women with PCOS. Given the significant link between PCOS and anxiety/depression, routine screening for anxiety and depression in women with PCOS is crucial (Rasgon et al., 2003; Barry et al., 2011; Dokras et al., 2011). Identifying and addressing these mental health issues can improve overall well-being and better management of PCOS-related symptoms.

1.4.3 Stress

Stress is the body's and mind's natural reaction to a real or perceived threat, difficulty, or demand that necessitates an individual's ability to adjust and cope (American Psychological Association, n.d.). External factors, such as major life events or daily hassles, can trigger stress. Women diagnosed with polycystic ovary syndrome (PCOS) experience chronic activation of the stress response system due to various stressors related to their condition, including infertility, weight gain, and hirsutism. Several studies have examined the association between stress and PCOS, suggesting that the persistent activation of the body's stress response system may contribute to developing anxiety and depression among women with PCOS. Kowalczyk, Kedzia, Dąbrowski, & Kuczyński (2018) found that stress was associated with imbalances in the hypothalamic-pituitary-adrenal (HPA) axis and increased insulin resistance in women with PCOS, which can lead to metabolic and reproductive complications. Furthermore, Ebrahimi, Heidari, Fathizadeh, Zolfaghari, & Mohammadipoor-Ghasemabad (2019) the intensity of hirsutism has been demonstrated to be strongly connected with rising degrees of anxiety in PCOS women. Conversely, Bahrami, Mazloun, & Behboodi-Moghadam (2015) noted that providing stress management training to women diagnosed with polycystic ovary syndrome (PCOS) can positively affect their psychological symptoms and overall quality of life. Research has indicated that interventions to manage stress can improve psychological well-being and enhance the overall well-

being of women living with PCOS.

1.4.4 Quality of life

The American Psychological Association (APA) defines *Quality of Life* (QoL) as an individual's assessment of their life about their goals, expectations, and cultural standards (American Psychological Association, n.d.). QoL encompasses physical, psychological, social, and environmental aspects of life. Polycystic Ovary Syndrome (PCOS) is a chronic condition that can significantly affect the QoL of women. Hormonal imbalances, polycystic ovaries, and irregular menstrual cycles characterize PCOS. Women with PCOS may experience various physical and emotional symptoms, which can negatively affect their QoL, including their physical, psychological, and social well-being. Several studies have investigated the relationship between PCOS and QoL. Bazarganipour et al. (2017) found that women with PCOS had lower QoL scores than those without PCOS. Specifically, women with PCOS reported lower scores in the physical, psychological, and social aspects of QoL. Tehrani et al. (2018) found that women with PCOS had lower QoL scores than women without PCOS, particularly in the physical, psychological, and environmental domains of QoL. The study also found that hirsutism and menstrual irregularities were significant factors associated with lower QoL scores in women with PCOS (Tehrani et al., 2018). The physical symptoms of PCOS, such as acne, hirsutism, and weight gain, can lead to decreased self-esteem and body image concerns, which can negatively impact the psychological and social domains of QoL. Furthermore, irregular menstrual cycles and infertility can cause frustration and stress, further impacting a woman's psychological and social well-being.

1.4.5 Emotional Regulation

The regulation of emotions is an essential aspect of human behavior that involves cognitive and behavioral strategies used to manage and regulate emotions. Emotional regulation refers to the

processes individuals use to influence the emotions they experience when they experience them and how they express them (American Psychological Association, n.d.). Effective emotional regulation entails managing the intensity and duration of emotional experiences and their impact on thoughts, behaviors, and social interactions. It is crucial in promoting mental health and well-being (American Psychological Association, n.d.). Research has demonstrated a connection between emotional regulation and polycystic ovary syndrome (PCOS), a hormonal disorder affecting women of reproductive age. Studies have found that women with PCOS exhibit higher levels of emotional dysregulation, associated with difficulties in managing and regulating emotions, leading to increased stress and negative emotional states (Gupta et al., 2020). Higher levels of emotional dysregulation have also been linked to depression, anxiety, and other psychological symptoms (Gupta et al., 2020). Furthermore, research suggests that mindfulness-based stress reduction (MBSR), which incorporates meditation and yoga to cultivate awareness and non-judgmental acceptance of thoughts, emotions, and bodily sensations, can improve emotional regulation and alleviate symptoms of PCOS (Gupta et al., 2020; Liao et al., 2019). Women with PCOS who participated in an 8-week MBSR program reported reduced symptoms of depression and anxiety, as well as improved emotional regulation (Liao et al., 2019). More research is required relationship between emotional regulation and PCOS to identify the most effective strategies for improving emotional regulation in individuals with the condition (Gupta et al., 2020).

1.5 Experiences of Women with Polycystic ovary syndrome

1.5.1 Psychological Well-being

Psychological well-being is a multifaceted construct encompassing subjective and objective indicators of positive functioning, as defined by the American Psychological Association (APA, n.d.). It encompasses various aspects of mental health, including positive emotions, resilience, self-acceptance,

personal growth, a sense of purpose and meaning, and positive relationships with others. Psychological well-being is integral to overall health and well-being, involving the prevention of mental anguish and promoting good mental functioning, alongside the capacity for adaptation and prosperity in challenging circumstances. The physical symptoms associated with polycystic ovary syndrome (PCOS), such as acne, weight gain, and irregular periods, can significantly impact women's psychological well-being. Research indicates that women diagnosed with PCOS are more prone to experiencing symptoms of anxiety and depression compared to those without the condition (Yin et al., 2001). This may be attributed to the hormonal imbalances associated with PCOS that affect mood regulation and lead to emotional distress. Furthermore, the physical symptoms of PCOS can contribute to psychological distress, as women may feel self-conscious about their appearance and discouraged about managing their symptoms. However, it is crucial to recognize that positive psychological well-being can aid in managing PCOS. Utilizing strategies for managing stress, receiving social support, and adopting effective coping mechanisms can assist women in improving their symptom management and overall well-being. Seeking assistance from mental health specialists can benefit women experiencing significant psychological distress related to PCOS.

1.5.2 Mind-Body Connection

The concept of the mind-body connection, which acknowledges the intricate relationship between an individual's psychological and emotional state and physical health, has been recognized in ancient cultures and traditional healing practices (Nedelec, 2020; Salleh, 2008). This concept emphasizes the interrelatedness of the body and mind, wherein changes in one can affect the other. While the mind-body connection has been acknowledged for centuries, it has recently garnered increased attention in modern medicine. According to research, difficult feelings and stressful situations affect one's physical well-being, making one more susceptible to various health disorders, such as coronary artery disease

and decreased immunity. (Cohen et al., 2012; Steptoe et al., 2007). Conversely, positive emotions and attitudes, such as optimism and resilience, can protect physical health (Steptoe et al., 2005; Tindle et al., 2009). The activation of the mind-body connection is closely tied to the functioning of the nervous system. The sympathetic nervous system, which causes the body's response to "fight or flight," is a stress response. (Brosschot et al., 2016). Prolonged sympathetic nervous system activation can harm health, including an increased risk of cardiovascular problems (Chida & Steptoe, 2010). In contrast, the parasympathetic nervous system, responsible for the "rest and digest" response, promotes relaxation, stress reduction, and improved health outcomes (Porges, 2007). Various practices and techniques can enhance the mind-body connection and promote overall well-being. Yoga, tai chi, and other mind-body practices have been shown to encourage relaxation, reduce stress, and improve psychological and physical health (Carlson et al., 2014; Pascoe & Bauer, 2015). Maintaining a physically active lifestyle, consuming a balanced and nutritious diet, and getting adequate rest are vital for supporting physical and mental well-being (Hamer & Steptoe, 2009; Smith et al., 2010). Studies conducted by Sayyah-Melli et al. (2015), Sahingoz et al. (2016), Elsenbruch et al. (2006), Zafari-Zangeneh et al. (2020), and Deeks et al. (2019) have explored the psychological aspects of polycystic ovary syndrome (PCOS) and its association with psychological distress, including anxiety, depression, and personality disorders. These studies have highlighted the increased susceptibility of PCOS patients to psychological difficulties, potentially influenced by stressful life events. The underlying mechanisms linking PCOS and psychological disorders are still not fully understood. However, the involvement of the hypothalamic-pituitary-adrenal (HPA) axis and stress-induced circadian patterns have been suggested (Giallauria et al., 2019). Managing psychological distress in PCOS patients is crucial regarding the quality of life and well-being, as motivation and confidence are essential factors in lifestyle modification treatments (Veltman-Verhulst et al., 2012).

1.5.3 Social Well-being

The American Psychological Association (APA) defines *social well-being* as a multidimensional concept relating to an individual's contentment with social relationships and ability to function effectively in social roles (American Psychological Association, n.d.). It encompasses aspects such as social support, social connectedness, and the quality of interpersonal relationships. Numerous factors, including personality traits like social skills and personality characteristics, and environmental factors like social norms and cultural values, influence social well-being (American Psychological Association, n.d.). It is also closely linked to other dimensions of well-being, such as physical and psychological health. The absence of positive social welfare may result in unfavorable consequences on a person's well-being and general quality of life, such as increased physical and mental health problems, social seclusion, and reduced satisfaction with life.

Conversely, high levels of social well-being have been linked to numerous positive outcomes, including improved physical health, greater stress resilience, and increased life expectancy (American Psychological Association, n.d.) Research indicates that women with PCOS may be at risk of reduced social support and isolation. They may feel stigmatized and misunderstood by others unaware of their condition. Consequently, they may avoid social situations and suffer from feelings of loneliness, anxiety, and depression. Palmetun Ekbäck (2014) conducted a study to examine the connection between social support and the quality of life related to health among women with hirsutism. The findings showed that social support significantly correlated with all health aspects. Women with hirsutism reported lower quality of life related to health compared to the average population in Sweden. Kamathenu's (2021) research aimed to assess and compare the levels of social anxiety and interpersonal relationships in patients with PCOS and those not diagnosed with it. The study revealed that women with PCOS reported moderate social anxiety but had high interpersonal relationships.

1.5.4 Relationship Dynamic

A romantic or intimate relationship between partners involves various aspects, such as communication patterns, emotional connection, power dynamics, and mutual respect (Authier et al., 2020; De Frène et al., 2014). In a healthy relationship, partners can openly communicate their needs and concerns, offer emotional support, and have mutual trust and respect. On the other hand, unhealthy relationship dynamics can lead to dissatisfaction, stress, and even abuse. Women with polycystic ovary syndrome (PCOS) may struggle to maintain healthy relationship dynamics due to physical and emotional symptoms such as weight gain, acne, anxiety, and depression. These symptoms can lower self-esteem and cause social anxiety, leading to difficulty connecting with others. The relationship dynamics with partners can also impact managing PCOS symptoms, with supportive partners promoting successful symptom management and improving the overall quality of life. Infertility is a common complication of PCOS that can affect a woman's emotional and psychological well-being and her relationship with her partner (Authier et al., 2020). Couples struggling with infertility may experience stress, anxiety, and disappointment, leading to conflict and strain in the relationship. Seeking support from healthcare professionals, such as fertility testing and treatment, counseling, and support groups, can help couples cope with the emotional impact of infertility and strengthen their relationship.

1.5.5 Coping Strategies

Coping mechanisms are the tactics that people employ to deal with routine challenges that might be consciously or unconsciously. In psychology, coping mechanisms are studied in the context of stress; there are two main categories of coping strategies that patients with PCOS can use: Problem-focused coping involves addressing the root cause of the stress, such as by studying more or seeking assistance

(Benson et al., 2020). On the other hand, emotion-focused coping aims to manage the emotional distress caused by the stressor, such as by distracting oneself (Bazarganipour et al., 2012). The effectiveness of coping mechanisms varies depending on the situation and the individual, with some being adaptive and effective, while others are maladaptive and can cause further problems (Kolahi et al., 2014). Effective coping often involves a combination of strategies; it should be emphasized that an essential aspect exists to consider a universal solution that works for everyone. Seeking professional help can assist in developing and implementing effective coping mechanisms (Teede et al., 2018). Implementing coping mechanisms can aid individuals in managing both the physical and emotional challenges of PCOS. Coping mechanisms can be categorized into two types: problem-focused coping and emotion-focused coping. Problem-focused strategies address the root cause of stress associated with PCOS, such as exercising and adopting a healthy diet (Benson et al., 2020). In contrast, emotion-focused coping strategies aim to manage the emotional distress caused by PCOS through techniques such as social support, relaxation methods, and professional mental health assistance (Bazarganipour et al., 2012). Effective coping mechanisms can improve the quality of life and symptom management for individuals with PCOS. It is essential to acknowledge that coping mechanisms do not have a universal effect and can differ in their effectiveness from person to person. Seeking professional help may help develop and implement effective coping mechanisms (Teede et al., 2018). Ultimately, with the proper coping mechanisms in place, individuals with PCOS can live fulfilling lives. Benson et al. (2020), in Germany, coping strategies examined a group of 448 patients with PCOS. The findings revealed that besides a decrease in quality of life, there was a correlation between the use of ineffective coping mechanisms and experiencing anxiety and depression. Bazarganipour et al. (2012) discovered that PCOS patients encountered different challenges in various aspects of their lives, and the effectiveness of coping strategies varied among individuals. Some patients found success in coping with the assistance of support from others, religious and spiritual backgrounds, and optimism, while others

experienced difficulties. Similarly, Kolahi et al. (2014) concluded that the quality of life of individuals with PCOS was related to coping strategies, including cognitive, problem-solving, social support, and emotional techniques. Lastly, Teede et al. (2018) examined the obstacles to lifestyle management in PCOS and recommended strategies for overcoming these challenges aligned with the Capability, Opportunity, Motivation, and Behavior model.

In our study, we utilize both quantitative and qualitative research methods. Quantitative research enables us to gather and analyze numerical data about depression, anxiety, and stress in women with PCOS. This data helps us examine the occurrence and intensity of these challenges and compare women with and without PCOS. On the other hand, qualitative research delves into the personal experiences and emotions of women with PCOS, offering valuable insights into different aspects of their well-being. By integrating these two approaches, we aim to comprehensively understand the psychological impact of PCOS and develop effective interventions that can improve the quality of life.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Depression

Deeks, Helm, Paul, and Teede (2011) conducted a cross-sectional study using a questionnaire to investigate the relationship between anxiety, depression, and body image in women with PCOS and a comparison group of individuals without the condition. The study included 177 women with PCOS and 109 healthy controls. The researchers utilized the Hospital Anxiety Depression Scale (HADS) and the Multidimensional Body-Self Relations Questionnaire (MBSRQ) to assess levels of anxiety and

depressionThe findings indicated that women diagnosed with PCOS exhibited notably higher average scores for anxiety and depression in comparison to the healthy control group. Multivariate regression analysis revealed that anxiety in PCOS was predicted by self-worth, health evaluation, time is taken to diagnose PCOS and age. Similarly, depression in PCOS was predicted by self-worth, quality of life, fitness orientation, appearance evaluation, and time to diagnosis. In both PCOS and control groups, body image and self-worth were predictors of both anxiety and depression, while quality of life predicted only depression. According to this research, women with PCOS had higher levels of depression, stress, and dissatisfaction with their bodies than women with no PCOS, and the time taken in terms of diagnosis of PCOS is connected with poor mental health.

Hasan, Sultana, Sohan, Parvin, Rahman, Hossain, Rahman, and Islam (2022) performed a virtual longitudinal study of 409 people with polycystic ovarian syndrome, or PCOS, throughout Bangladesh to assess the frequency of psychological problems and related variables. The study used structured questionnaires to collect sociodemographic information and lifestyle-related factors, along with a patient health questionnaire (PHQ-9), generalized anxiety disorder (GAD-7) scale, and UCLA loneliness (UCLA-3) scale for the psychometric assessment of the participants. The authors applied several statistical tools and interpreted data to analyze the collected data. The study findings revealed that among women with PCOS, the prevalence of loneliness, generalized anxiety disorder, and depressive illness was 71%, 88%, and 60%. Mild, moderate, and severe cases of mental illnesses were 39%, 18%, and 14% for loneliness; 39%, 23%, and 26% for generalized anxiety disorder; and 35%, 18%, and 7% for depressive disorder. In their study, the authors discovered that factors such as obesity, financial status, physical activity, mealtime patterns, dietary habits, daily water intake, choice of birth control method, and long-term use of oral contraceptive pills were identified as contributors to the emergence of mental health disorders in Bangladeshi women with PCOS. As per the results, a high

proportion of women with PCOS in Bangladesh experience several mental disorders, and PCOS itself is a condition that favors poor physical and psychological health. The authors recommend proper treatment, raising public awareness, and encouraging a healthy lifestyle to support women with PCOS's mental well-being.

Delanerolle, Ayis, Barzilova, Phiri, Zeng, Ranaweera, Shetty, Haque, Kar, Majumder, Rathod, Raymont, Shi, and Hapangama (2022) conducted a systematic review to assess the mental health issues in women with PCOS/PCOD. The authors searched multiple electronic databases using keywords and MeSH terms and included 30 studies reporting on 3,944 PCOS women. The studies had fair to poor methodological quality and included observational studies and Randomized Clinical Trials (RCTs). The final dataset was analyzed using statistical methods such as random-effect models, subgroup analysis, and sensitivity analysis. The authors found that 17% of women with PCOS have a clinical diagnosis of significant or severe depression, while 33% have elevated depressive symptoms or a clinical diagnosis of depression. Additionally, 41% of women with PCOS report anxiety symptoms, and 31% have a form of everyday mental health or are taking psychiatric medication for anxiety and depression. The use of various tools to assess mental health symptoms was among the reasons for the substantial heterogeneity across studies. According to the authors, PCOS is linked to a higher susceptibility to mental health disorders, precisely symptoms of depression and anxiety. However, stratification by ethnicity was rarely attempted in the studies, making it challenging to elucidate the mental health impact of PCOS on different communities.

Blay, Passos, and Aguiarves Cavalcante Passos (2016) conducted a systematic review and meta-analysis; the primary objective is to examine the prevalence rates of various psychological disorders, including mood disorders, the conditions that may be associated with obsessive-compulsive spectrum

disorders, including trauma- and stressor-related disorders, anxiety disorders, psychotic disorders, and eating disorders and in patients with and without PCOD/PCOS. The authors searched several databases and included original reports in which psychiatric diagnosis was established by a structured diagnostic interview or through a validated screening tool. They extracted and pooled data using random effects models. The authors found six studies that met their inclusion criteria, of which five reported rates of anxiety and six provided data on the rates of depression. The meta-analysis revealed that the rate of subjects with anxiety symptoms was higher in patients with PCOS compared to women without PCOS. Similarly, the rate of subjects with depressive symptoms was higher in terms of PCOS compared to women without PCOS. Therefore, the authors concluded that women with PCOS have a higher likelihood of experiencing symptoms related to anxiety and depression compared to women without PCOS.

Hollinrake, Abreu, Maifeld, Van Voorhis, and Dokras (2007) conducted a cohort study to estimate the prevalence of depressive disorders among women with PCOS compared to controls and to evaluate the correlation between depression, hyperandrogenism, and other metabolic markers. Women with PCOS (n=103) were compared to control subjects (n=103) who did not have PCOS, seen at the same time for an annual exam. The researchers utilized the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD PHQ) and the Beck Depression Inventory as assessment tools to evaluate depressive disorders. The findings indicated that women diagnosed with PCOS were more susceptible to depressive disorders than the control group. Specifically, 21% of women with PCOS were diagnosed with depressive disorders, whereas only 3% of the control group experienced such diagnoses. Notably, this increased risk persisted irrespective of factors like obesity and infertility. Insulin resistance and body mass index were seen to be higher as compared to the patients who had

PCOS without any kind of mental illness. The study recommends routine screening for depressive disorders among women with PCOS.

Batool, Ahmed, Ambreen, Sheikh, and Faryad (2023), conducted a cohort study at Fatima Memorial Hospital with 137 patients with PCOS and a similar number of controls. The participants completed the HADS questionnaire, and a biochemical assessment was done to find associates between PCOS with depression and PCOS without depression. The findings of the study indicated a higher incidence of depression and anxiety among women with PCOS when compared to both the control group and the general population.

2.2 Anxiety

Dokras, Clifton, Futterweit, and Wild (2011) performed a comprehensive analysis and meta-evaluation to establish the occurrence rate of anxiety symptoms among females diagnosed with polycystic ovary syndrome (PCOS). A total of 613 articles were screened, and nine were selected for the review. Four studies were included in the meta-analysis, which used Cochrane Review Manager 5.0.24 software to construct forest plots comparing the frequency of anxiety symptoms in case and control subjects. The key metric to assess the results was the frequency or occurrence of anxiety symptoms, considered the primary outcome measure. According to the findings, females diagnosed with PCOS had a higher incidence or prevalence of anxiety symptoms than the control group. Three of the remaining five studies showed a notable or substantial rise in the mean anxiety score. The authors concluded that all women with PCOS should be screened for anxiety symptoms, and because generalized anxiety disorder is a chronic ailment, the authors suggested that individuals diagnosed with PCOS must receive follow-up evaluation and treatment. They also suggested potential contributors to anxiety symptoms, such as hirsutism, obesity, and infertility, may be specific to women with PCOS and need

further investigation.

Cooney, Lee, Sammel, and Dokras (2017) conducted a comprehensive systematic review and meta-analysis to study the occurrence of depressive and anxiety symptoms in females diagnosed with polycystic ovary syndrome (PCOS) versus those in the control group without PCOS. They searched Ovid, Embase, PsychInfo, and Cochrane databases up to January 2016 and included 30 cross-sectional studies representing 3050 subjects with PCOS and 3858 controls from 10 different countries. The inclusion criteria were adult women with PCOS, defined by Rotterdam criteria, and a control group without PCOS. The studies used validated screening tools to compare the prevalence or mean scores of depressive and anxiety symptoms. Random effects MA was used to estimate the pooled odds ratio (OR) of depressive and anxiety symptoms, and sensitivity analyses of methodological characteristics and a meta-regression of the pooled standardized mean difference (SMD) to evaluate PCOS-related clinical and laboratory associations were performed. The findings indicated that females with PCOS had a higher incidence or prevalence of depression and anxiety than the control group. Women with PCOS also had higher odds of any anxiety symptoms and moderate/severe anxiety symptoms. Even when subjects were matched on BMI, women with PCOS had higher odds of depressive and anxiety symptoms. There was no substantial heterogeneity among studies in the overall MA on depressive symptoms, but there was significant heterogeneity among studies in the analysis on anxiety symptoms. In the meta-regression analysis examining the combined standardized mean differences (SMDs) between different groups, it was observed that women with PCOS and concurrent depression exhibited higher average values for age, BMI, hirsutism score, and insulin resistance (IR). On the other hand, women with PCOS and concurrent anxiety displayed higher average values for BMI, hirsutism score, and free testosterone levels.

Dybciak, Humeniuk, Raczkiwicz, Krakowiak, Wdowiak, and Bojar (2022), conducted a study to establish both the occurrence rate and intensity of depressive and anxiety symptoms. The results showed that women with PCOS. The study found that individuals with the condition had elevated levels of anxiety, depression, and ego-resiliency compared to healthy women. Passive stress-coping strategies were significantly more common among women with PCOS than The research was carried out in 2021 and involved a total of 230 women diagnosed with PCOS and 199 healthy controls, all between the ages of 20 and 40 years. The researchers utilized various assessment tools to gather data, including the Hospital Anxiety and Depression Scale (HADS), the Ego-Resiliency Scale, and the MINI-COPE inventory.

Månsson, Holte, Landin-Wilhelmsen, Dahlgren, Johansson, and Landén (2008) aimed to investigate the prevalence of clinical psychiatric disorders in women with polycystic ovary syndrome (PCOS) compared to the average population. The study included 49 women with PCOS who met the Rotterdam criteria for PCOS and 49 age-matched controls from the population registry. Clinicians trained in the MINI International Neuropsychiatric Interview determined the lifetime occurrence of Axis I DSM diagnoses. Serum testosterone and sex hormone-binding globulin were also analyzed. The findings indicated that women diagnosed with PCOS exhibited more excellent depressive episodes, social phobia, and eating disorders throughout their lifetime than the control group. Suicide attempts were also found to be controlled.

Moreover, the PCOS group exhibited a higher current and lifetime use of antidepressants and anxiolytic drugs than controls. The authors concluded that PCOS is not only associated with decreased quality of life and self-rated mental symptoms but is also linked to psychiatric syndromes, as verified by structured clinical assessments. Therefore, clinicians treating women with PCOS should be aware that these women are at high risk for common affective and anxiety disorders and suicide attempts.

Lin, Liu, Zhong, Ng, Liu, Li, Shi, Zhang, Wen, Mai, and Ma (2021) conducted a secondary analysis of three studies to determine the prevalence of anxiety/depression-like behaviors among Chinese women with PCOS and identify factors associated with these behaviors. The modified Rotterdam criteria were used to diagnose PCOS in women aged 18 to 40. Eight hundred-two responses were gathered for the self-rating anxiety scale, while the self-rating depression scale received 798 responses, as reported by the researchers. Authors found that anxiety-like behaviors were associated with age, body image-related factors (such as body mass index and waist-to-hip ratio), and hyperandrogenism-related factors (including free androgen index and hirsutism). Depression-like behaviors were associated with age, body image-related factors, hyperandrogenism-related factors, and metabolic factors (including fasting insulin, fasting plasma glucose, and homeostatic model assessment of insulin resistance). Body image-related and hyperandrogenism-related factors were related to both anxiety-like and depression-like behaviors in infertile and fertile PCOS.

2.3 Stress

Sulaiman, Al-Farsi, Al-Khaduri, Waly, Saleh, and Al-Adawi (2017) conducted a hospital-based case-control study aimed at comparing sociodemographic and clinical characteristics of women diagnosed with PCOS and those without PCOS and exploring the association between PCOS and psychological disturbances. The study included 52 women with PCOS and 60 PCOS-free controls aged between 16 and 49. The tool employed to measure the severity of depression, anxiety, and stress symptoms was the Depression, Anxiety, and Stress Scale-21 (DASS-21). Using logistic regression models, the study showed that females diagnosed with PCOS were at a greater risk of developing depression, anxiety, and stress than those in the control group. However, no significant statistical variations were observed regarding the remaining variable(s) investigated by two study groups regarding the three psychological

distresses. The study suggests that meeting the psychological needs of women with PCOS should be contemplated.

Basu, Chowdhury, and Saha (2018) aimed to investigate the relationship between stress-associated factors and alterations in body composition among patients with Polycystic Ovary Syndrome (PCOS). The study enrolled 100 PCOS patients and 60 age-matched controls between 13 and 30. The participants were selected based on. The European Society of Human Reproduction criteria standard assay kits were utilized to assess the α -amylase activity and cortisol level in saliva samples per Salimetrics protocol from the USA. The gathered data was analyzed using SPSS version 20 on a Windows operating system. Results showed that the PCOS population had increased salivary cortisol levels and α -amylase activity, suggesting a sustained stress scenario in their system. Overweight PCOS participants showed higher amylase activity than the lean participants. Pulse rate, body mass index (BMI), visceral adiposity, and waist-hip ratio (WHR) were significantly higher in PCOS patients compared to the controls. A significant correlation was observed between the α -amylase activity and BMI or WHR among PCOS patients, indicating that stress does affect the body composition of women with PCOD/PCOS

Canavatchel (2014) investigated the physiological response of women with PCOS to a brief stressor and compared it to that of healthy women. Sixteen women with PCOS and 64 healthy controls were included in the study. Saliva samples were collected five times before, during, and after the Social Competence Interview (SCI) to measure cortisol reactivity to the stressor. Participants completed questionnaires about perceived stress, psychiatric symptoms, and physiological health. Results showed that women with PCOS reported significantly more somatic complaints and had a higher baseline

cortisol level than healthy controls. The study suggests that future research should explore other psychological and physiological factors contributing to the experience of stress in women with PCOS.

Goyal, Doomra, Atkaan, Singh, and Bhatia (2021) conducted research in order to explore the correlation or link between stress and symptoms of polycystic ovary syndrome (PCOS) among female students. The study involved 120 participants who filled out an online questionnaire consisting of 31 questions related to stress and symptoms of PCOS. Results showed that 54.5% of the respondents reported decreased efficiency due to a lack of sound sleep caused by situational stress. Recurrence of sleeplessness led to anger in 71% of the respondents. Additionally, 55% of the respondents had signs of early reproductive/late adolescence and experienced irregular menstrual cycles, facial hair, stretch marks, acne, and severe hair fall. The study concluded that 57% of the respondents had both stress and symptoms of PCOS, and modifications in lifestyle and dietary habits could control and improve the situation. However, a healthy lifestyle alone is not a complete cure for PCOS.

2.4 Quality of life

In a cross-sectional study conducted by Behboodi Moghadam, Fereidooni, Saffari, and Montazeri (2018), the health-related Quality of life of 200 women with polycystic ovary syndrome (PCOS) in Hamadan, Iran, was assessed. Health-related Quality of Life Questionnaire which is a Persian version of the scale for PCOS (PCOSQ), in order to get access to information related to Quality of life. Descriptive statistics were employed to examine the collected data, while linear regression analysis evaluated the association or connection between the variables under scrutiny. The study's results revealed that the Quality of life domains had mean scores of infertility, emotions, menstrual problems, body hair, and weight, from the greatest to the least severe concern. A higher score was indicative of better function. However, multivariate analysis revealed that hirsutism had the most substantial impact

on the patient's Quality of life, followed by infertility and menstrual irregularity. The authors reached the conclusion that Quality of life impairment was linked to conditions associated with PCOS, such as infertility, hirsutism, and menstrual problems, based on their research results.

In 2021, Fauzia Tabassum et al. conducted a case-control study to investigate the effect of polycystic ovary syndrome (PCOS) on women's health-related Quality of life (HRQOL). The study involved 100 PCOS cases and 200 healthy controls from a tertiary care center in India. The authors utilized the Short Form Health survey-36 to evaluate the impact of PCOS on HRQOL. Multivariate analysis was performed to analyze the collected data. The study revealed that PCOS cases had significantly lower HRQOL than the control group. The authors also found that the age of menarche, menstrual history, and nulliparity were significantly altered in the PCOS cases, with a higher frequency of pregnancies and miscarriages in this group. The study also highlighted that increased body mass index, menstrual irregularities, educational status, and marital status significantly affected HRQOL in PCOS cases. The authors recommended providing psychological care to PCOS patients during their treatment.

Mahnaz Bahri Khomami et al. (2015) conducted a study to investigate the relationship between health-related Quality of life (HRQOL) and symptoms of polycystic ovary syndrome (PCOS) in Iranian women. Seven hundred ninety-six women diagnosed with PCOS between the ages of 15-49 were assessed through interviews, medical examinations, and questionnaires. The authors utilized the Persian version of the HRQOL questionnaire to evaluate the HRQOL of these women and employed linear regression models for data analysis. The study revealed that hirsutism had the most significant impact on the HRQOL of Iranian women diagnosed with PCOS, followed by body mass index, irregular menstrual cycles, and infertility. The severity of hirsutism was directly related to a reduction in HRQOL score. The mean age of the participants was 28.02 years, and 35.4% were overweight or

obese. The authors recommended that healthcare providers develop management strategies based on psychological and physical manifestations and focus on the psychological aspects of PCOS management to enhance the HRQOL of women diagnosed with PCOS in Iran.

A prospective cohort study was conducted by Eisenberg et al. (2021). Their area of focus was the Quality of life (QOL) of infertile females with polycystic ovary syndrome (PCOS) and unexplained infertility (UI) compared to their male partners. The study aimed to compare the concordance of FertiQOL scores in this study with worldwide cohorts and determine if baseline FertiQOL was associated with pregnancy outcomes. During the study screening visit, a validated fertility-specific quality of life (QOL) survey called FertiQOL was completed by 733 women with PCOS and 641 of their partners, as well as 865 women and 849 men experiencing infertility (UI). The PCOS women were randomized to either clomiphene citrate or letrozole treatment, while couples with UI were randomized to clomiphene citrate, letrozole, or gonadotrophin plus IUI. The study found that women with PCOS had lower total FertiQOL scores than those with UI, which was valid for each domain except for Relational. Additionally, women had lower overall FertiQOL scores than their male partners. The study also observed that scores were not consistently associated with conception or pregnancy outcomes. The authors concluded that factors such as BMI, hirsutism, household income, and age explained the differences in QOL between PCOS and UI women.

Greenwood, P., Cedars, L., & Huddleston (2018). In order to examine the connection between health-related Quality of life and depression among women diagnosed with polycystic ovary syndrome (PCOS), a secondary analysis was conducted on a multicenter, randomized clinical trial. The study included 732 women between 18 and 40 with polycystic ovary syndrome. The women completed the validated Polycystic Ovary Syndrome Health-Related Quality of Life survey, which assesses emotions,

body hair, body weight, menstrual problems, and infertility. Depression was assessed using the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire. Quality of life scores were compared between depressed and non-depressed women using unadjusted regression analyses. Multivariate linear regression models were then used to examine the association between depression and Quality of life scores while controlling for age, body mass index, hirsutism score, and duration of infertility.

Behboodi Moghadam et al. (2022) conducted a review of existing literature to examine the Quality of life (QoL) in women with polycystic ovary syndrome (PCOS). They searched for relevant studies published between 1945 and 2017 in three different databases, including MEDLINE, ISI Web of Science, and Scopus. Of the 52 studies included in the review, 43 were quantitative, and nine were qualitative. The researchers found that among the studies reviewed, several instruments were used to measure the Quality of life (QoL) in women with PCOS. Specifically, three instruments were specific to PCOS, and five were more general. The PCOSQ is an assessment tool designed to evaluate the Quality of life related to health in females diagnosed with polycystic ovary syndrome. A review of studies discovered that the PCOSQ, along with the 36-Item Short Form Health Survey (SF-36), were the frequently used questionnaires to measure the Quality of life in this population. Their analysis showed that PCOS had negative impacts on QoL in women with this condition. All studies assessed different aspects of QoL in women with PCOS. The authors recommended using a specific questionnaire alone or in combination with a generic measure to capture QoL in PCOS women. Both the PCOSQ and SF-36 were effective in identifying areas that could help improve QoL in women with PCOS.

Dey (2018) conducted a study to assess the Quality of life (QOL) of women with polycystic ovarian syndrome (PCOS). Eighty-four patients with PCOS were included in the study, and their QOL was evaluated using the SF 36 questionnaire. The research discovered that a majority of the participants in the study, 75%, were students, 56.7% had graduated, and 86.7% were non-vegetarian. The sample had a mean height and weight of 155 ± 4.81 centimeters and 59.35 ± 6.63 kgs, respectively, and a mean BMI of 24.70 ± 3.47 . Additionally, the study found that 35% of the sample had been diagnosed with PCOS for less than a year, while 65% had been diagnosed for more than a year. The QOL scores of the patients were significantly lower compared to healthy individuals, and this reduction was independent of the duration of the illness.

2.5 Emotional Regulation

Meenakshi and Fenn (2018) conducted a study to examine the differences in depression, anxiety, stress, and emotion regulation levels between women with polycystic ovary syndrome (PCOS) from Kerala and those without PCOS. The study included 86 women, of which 43 had PCOS, while 43 did not have PCOS. To collect data, the researchers utilized the depression, anxiety, and stress scale and the emotion regulation questionnaire. The study's findings revealed that women diagnosed with PCOS had notably elevated levels of depression and anxiety compared to women without PCOS. Additionally, the study found that individuals with PCOS had significantly lower levels of emotional regulation than those without PCOS. The study also revealed that young women had higher anxiety levels, which could be due to uncertainties arising from the pandemic.

Veltman-Verhulst, Boivin, Eijkemans, and Fauser (2012) conducted a meta-analysis of 28 comparative studies to evaluate the emotional distress experienced by women with polycystic ovary syndrome (PCOS). The researchers utilized several databases, including PubMed, Embase, PsychInfo, and the

Cochrane trial register, to collect data up to November 2011, including unpublished data. The study calculated the standardized mean difference (SMD) of distress scores and conducted subgroup and meta-regression analyses of methodological and PCOS-related features. The findings revealed that women with PCOS experienced significantly higher emotional distress, including depression, anxiety, and emotional-subscale of quality of life (emoQoL), than control populations. Nonetheless, there was heterogeneity in the results. The study concluded that clinicians should be mindful of the emotional aspects of PCOS and provide adequate support to patients.

Javed, Ahmad, and Iqbal (2022) aimed to explore the relationships between resilience, emotional regulation, and marital satisfaction in females diagnosed with polycystic ovarian syndrome (PCOS). The study recruited 100 female participants through purposive sampling from different clinics and hospitals in Lahore. The State Resilience Scale, Emotional Regulation Questionnaire, and Relationship Assessment Scale were used to measure the variables. The study findings indicated that marital satisfaction significantly correlated with resilience and emotional regulation, specifically cognitive reappraisal and expressive suppression. Regression analysis showed that resilience and cognitive reappraisal were significant positive predictors of marital satisfaction.

Furthermore, the study discovered that females who did not have acne symptoms had higher cognitive reappraisal and expressive suppression. In contrast, those who did not have irregular menstruation had higher resilience and marital satisfaction. The study emphasizes the significance of considering PCOS as a matter of female health and promoting resilience and emotional regulation skills to enhance marital satisfaction and overall well-being.

Wang, Liu, and Lei (2023) utilized the latent profile analysis (LPA) approach to identify mental health profiles in women with PCOS based on the dual-factor approach. The study found three distinct mental

health profiles within women with PCOS: Symptomatic but Content Profile, Complete Mental Health Profile, and Troubled Profile, with group proportions of 52.3%, 35.7%, and 11.1%, respectively. The study also examined the differences in demographic and anthropometric variables, cognitive reappraisal, expressive suppression, and social support across mental health profiles through multinomial logistic regression. Results showed that cognitive reappraisal and social support were associated with positive mental health adjustment, while expressive suppression was associated with negative barriers in women with PCOS. The study's findings suggest the need for more tailored interventions to address the diverse mental health needs of women with PCOS.

Blay, Aguiar, and Passos (2016) conducted a meta-analysis to compare the rates of various psychiatric disorders in patients with PCOS/PCOD to those without PCOS. The authors searched several databases, including PubMed/MEDLINE, Embase, PsycINFO, and Web of Science, for studies examining mood disorders, obsessive-compulsive spectrum disorders, trauma- and stressor-related disorders, anxiety disorders, psychotic disorders, somatic symptom, and related disorders, or eating disorders in women diagnosed with PCOS. The meta-analysis included six studies, and the data were pooled using random effects models. The findings indicated that women with PCOS have higher rates of anxiety and depression symptoms compared to women without PCOS. The study suggests anxiety and depression symptoms are more common in women with PCOS.

2.6 Coping Strategies

Carron, Kooienga, Boyle, and Alvero (2017) studied the coping strategies women with Polycystic Ovary Syndrome (PCOS) use to manage stress. The study included 72 women from the United States and analyzed both adaptive and maladaptive coping strategies. The results showed that most women with PCOS employed adaptive coping strategies, including social support, problem-solving, and

positive reappraisal. However, some women with higher psychological severity scores utilized maladaptive coping mechanisms, such as escape-avoidance coping, less problem-solving, and positive reappraisal coping. The study emphasizes the significance of evaluating coping skills in women with PCOS. It underscores the crucial role that nurse practitioners can play in assessing coping skills, intervening with adaptive coping interventions, and helping women with PCOS manage the psychological impact of the condition.

Ghare Naz, Tehrani, and Ozgoli (2019) employed qualitative methods to explore the experiences of adolescents between the ages of 13 and 19 living with Polycystic Ovary Syndrome (PCOS). Fifteen adolescents with PCOS were selected for the study using purposive sampling and participated in in-depth individual interviews conducted with semi-structured, goal-oriented questions. The data were analyzed using thematic analysis, revealing that the central theme that emerged was "dealing with PCOS." The central theme was further divided into three themes and twelve sub-themes. The first theme was "Escaping the problem," which included sub-themes such as forgetting about the condition and concealing and minimizing it. The second theme was "Depressive mood," which included sub-themes like poor self-perception, isolation, and emotional turmoil. The third theme, "Coping with the disease," included sub-themes like positive thinking and hope for recovery. The research emphasizes the significance of comprehending the coping mechanisms and experiences of adolescents diagnosed with PCOS. It suggests that healthcare professionals should consider the emotional and psychological needs of adolescents with PCOS, including their self-perception, self-esteem, isolation, and emotional turmoil. The investigation emphasizes the significance of providing adequate assistance and therapies to teenagers with PCOS to enhance their quality of life.

Moradi et al. (2020) conducted a randomized controlled trial to evaluate the efficacy of group counseling Expressed through the lens of acceptance and commitment therapy (ACT) in enhancing

body image and self-esteem among women with polycystic ovary syndrome (PCOS). In the study, 52 women with PCOS were allocated randomly between intervention or control groups using a random table. The intervention group underwent group counseling based on ACT for eight sessions, lasting 90 minutes, once a week. Both groups completed a demographic questionnaire, the Littleton development of the body image concern inventory, and the Rosenberg self-esteem scale before, immediately after, and one month after the intervention. The results showed/indicated that the mean scores of body image concern and self-esteem in the intervention group after the intervention and follow-up differed significantly from those in the control group. This study suggests that group counseling based on ACT can improve body image and self-esteem in women with PCOS.

Khademi, Alleyassin, Aghahosseini, Tabatabaeefar, and Amini(2010) conducted a cross-sectional study to assess the occurrence rate of PCOS in women who engage in regular exercise. The study included all women under 45 years old with a history of exercising for more than six months from an industrial company. PCOS was diagnosed using the revised 2003 Rotterdam ESHRE/ASRM consensus criteria, ruling out other related disorders. The research also discovered a difference of statistical significance between mean BMI between PCOS and non-PCOS women in obese subjects. In lean subjects, no significant difference was seen in BMI between PCOS and non-PCOS women.

Patten (2020) performed a meta-analysis to identify exercise intervention characteristics effective for women with PCOS. They searched EBSCOhost and Ovid Medline for published literature up to May 2019 and followed the PRISMA guidelines. The study included randomized controlled trials, non-randomized controlled trials, and uncontrolled trials that assessed moderate to high-intensity exercise interventions in women with PCOS. They found that exercise intensity was more important than exercise duration in improving health outcomes and that vigorous exercise resulted in moderate

increases in VO₂peak, small reductions in HOMA-IR, and waist circumference. The study concluded that vigorous-intensity exercise, alone or in combination with diet, provided the most significant improvements in BMI, and waist circumference, particularly for women with clinically negative baseline values.

Xenou and Gourounti (2021) conducted a systematic review to identify the appropriate diet international literature recommends for women with PCOS to alleviate their symptoms. They searched electronic databases containing medical topics and found 123 articles, of which seven were relevant to their topic of interest. The review revealed that diet is crucial in the clinical and laboratory findings of PCOS, and modifying women's diets resulted in positive outcomes in the clinical presentation of the syndrome. Based on the studies they reviewed, the authors provided a diet considered beneficial in improving PCOS's clinical and laboratory features.

Young, Rew, and Monge (2019) conducted a qualitative study that aimed to explore the perspectives of adolescents and their parents regarding the transition to self-management of polycystic ovary syndrome (PCOS). The study involved four focus groups with seven adolescents and eight parents. The central theme in the parent groups concerned the transition to self-care, subthemes such as facilitation versus direction, and recognition of personal habits. On the other hand, the central theme identified in the adolescent groups was Taking Control, with subthemes such as managing symptoms, cognitive dissonance, support, and balance. The study underscores the importance of considering parental and adolescent viewpoints when developing interventions to support the transition to self-management of PCOS.

2.7 Relationship Dynamic

De Frène et al. (2014) conducted a cross-sectional study at Ghent University Hospital fertility center to explore the correlation between PCOS-related concerns and sexual and relational satisfaction among 31 overweight women with PCOS and their partners. The PCOS Questionnaire was used to evaluate objective PCOS characteristics, and sexual and relational satisfaction was measured using the Maudsley Marital Questionnaire. Examination of the data was done through the linear mixed model. The results indicated that women with PCOS with lower parity had higher levels of sexual and relational satisfaction, and this association was significantly more robust than their partners. The study identified a correlation between higher BMI and decreased sexual satisfaction and higher levels of relational satisfaction in women with PCOS and their partners, respectively, with a stronger association observed in the partners. Additionally, a higher level of infertility-related concerns and an unfulfilled wish to conceive were significantly associated with higher levels of relational satisfaction in women with PCOS compared to their partners. Finally, women with PCOS and their partners with higher levels of acne-related concerns had lower levels of sexual satisfaction.

Wang, Li, Zhang, Yu, and Jiang (2017) conducted a descriptive study in China to assess the psychological health status and marital quality of women undergoing IVF-intracytoplasmic sperm injection (ICSI) and to compare the results with a control group. The research also aimed to identify clinical and sociodemographic factors that could affect these women's psychological health status and marital quality. The study comprised two groups of infertile women registered for IVF or IVF-ICSI (100 in each group) and a control group of 100 women with no known infertility history. The participants completed the Hopkins Symptom Checklist-90 (SCL-90) to evaluate their psychological status and the ENRICH marital inventory to assess their marital quality. The findings showed that infertile Chinese women registered for IVF-ICSI had significantly higher scores on all SCL-90

subscales than the control group.

Moreover, women in the IVF group had higher depression scores than those in the ICSI group. The study group had less stable relationships compared to the control group. The results also revealed that age, yearly income, duration of infertility, and history of unsuccessful IVF treatment were negatively associated with psychological health status and marital quality.

Safari, Hasanpoor-Azghady, and Amiri-Farahani (2023) conducted a study to investigate the association between men's forgiveness, the coping strategies of infertile Iranian women, and their marital satisfaction. The study included 200 infertile couples, and data was collected using various questionnaires, including a demographic and fertility questionnaire, the Family Forgiveness Scale (FFS), the Index of Marital Satisfaction (IMS), and the Ways of Coping Questionnaire-revised (WOCQ-R). A significant positive correlation was evident in the results of husbands' forgiveness and the marital satisfaction of infertile women. Although the research demonstrated a significant direct relationship between husbands' forgiveness and the marital satisfaction of infertile women, no notable association was found between husbands' forgiveness and emotion-focused and problem-focused coping of infertile women. In addition, the study found that the recognition subscale had an inverse correlation with the emotional coping of infertile women. These results indicate the necessity for more studies in this field and emphasize the significance of husbands' forgiveness for the marital satisfaction of infertile women.

Drosdzol et al. (2007) conducted a study to assess how polycystic ovary syndrome (PCOS) affects the sexual satisfaction and quality of life of women with the condition. The research group comprised fifty women diagnosed with PCOS, while the control group included forty healthy women. A questionnaire consisting of a sociodemographic section, PCOS symptoms, and validated scales such as the Polish

SF-36 for Health Survey and the Index of Sexual Satisfaction (ISS) was used to collect data. The study's findings showed that women with PCOS showed lower quality of life than the control group, particularly in general health, limitations due to physical health, emotional problems, social functioning, energy/fatigue, and well-being. Additionally, the sexual functioning of women with PCOS was worse than that of healthy women. The study also found that 28.6% of women with PCOS had marital sexual dysfunctions, while only 10.5% of healthy women did. The researchers concluded that PCOS decreases the quality of life and sexual functioning of affected women, with hirsutism severity also impacting general well-being and marital sexual life.

2.8 Social Wellbeing

This study by Kamathenu et al. (2021) aimed to compare the levels of social anxiety and interpersonal relationships between women with polycystic ovary syndrome (PCOS) and women without PCOS. The study utilized a convenience sample of women aged 22 to 45 and employed the Social Anxiety Questionnaire for Adults and the Relationship Assessment Scale as research tools. The data was analyzed using SPSS 20. The results indicated no correlation between social anxiety and interpersonal relationships. In addition, the research revealed a notable contrast between women with PCOS and those without, as the former reported a moderate degree of social anxiety but high levels of interpersonal relationships. In contrast, the latter reported a low level of social anxiety and moderate levels of interpersonal relationships.

Bazarganipour et al. (2013) conducted a cross-sectional study in Kashan, Iran, intending to explore the relationship between psychological well-being, particularly self-esteem and body satisfaction, and PCOS characteristics. The study involved 300 women with PCOS and used the Body Image Concern Inventory (BICI) and the Rosenberg's Self-Esteem Scale, along with clinical information on PCOS

symptoms such as obesity (BMI), hirsutism, acne, menstrual cycle disturbances, and infertility. The study found that women with infertility related to PCOS had lower self-esteem and poorer body satisfaction compared to those without infertility. Additionally, women with hirsutism experienced lower self-esteem, while those with menstrual irregularities had higher body dissatisfaction. Women with a higher BMI had poorer body satisfaction, but BMI was not found to be associated with self-esteem. The researchers used regression analysis to analyze the data.

Samardzic et al. (2021) conducted a qualitative study to investigate how polycystic ovary syndrome (PCOS) affects the sense of normality and identity of young Canadian women aged 18 to 22. The study interviewed ten participants, and reflexive thematic analysis was conducted using a critical feminist perspective. The study found three themes: rationalizing abnormality, pathologizing abnormality, and fear of pregnancy failure. The participants reported feeling abnormal and concerned about their ability to conform to gender expectations due to their symptoms. The study emphasized the pervasive implications of gender power dynamics in medical institutions for women's lives, which further reinforced their sense of inadequacy and deficiency. The authors suggested that acknowledging discomfort and using PCOS as a unique entry point for analyzing intersectional issues could capture the intricacies of lived experiences.

Amiri et al. (2014) conducted a qualitative research study to explore the impact of PCOS on women's gender roles and their experiences and perceptions. The study recruited 23 women of reproductive age with PCOS from the reproductive endocrinology research center at Shahid Beheshti University in Tehran, and semi-structured interviews were conducted to gather data. Content analysis of the data was carried out manually, and four themes were identified: lack of physical attractiveness, loss of femininity, disruption of sexual function, and impairment of fertility potential. These themes were

associated with symptoms such as menstrual periods that are erratic or non-existent, obesity, and infertility, commonly experienced by women with PCOS.

Kitzinger and Willmott's (2002) study aimed to investigate women's experiences and perspectives of polycystic ovarian syndrome (PCOS), which differed from previous research that primarily viewed PCOS from a medical or psychiatric perspective. The research employed in-depth, semi-structured interviews with 30 PCOS women recruited through a national self-help organization. Using thematic analysis of the interviews, the study found that women with PCOS often felt abnormal, freakish, and less feminine due to symptoms such as excess hair growth, irregular periods, and infertility. The study indicates that PCOS is a highly stigmatized condition that significantly impacts women's sense of identity and femininity and proposes a feminist approach to understanding and addressing the syndrome's effects. The results underscore the need for a more comprehensive approach to PCOS that considers the intricate interplay of medical, social, and cultural factors that influence women's experiences with the syndrome.

Sharma and Mishra (2017) carried out a fieldwork-based study to explore the sociocultural impact of the polycystic ovarian syndrome (PCOS) on Indian women, especially those from the Economically Weaker Section (EWS). The researchers interviewed female PCOS patients in the Outpatient Department of a government hospital in Jammu, using a semi-structured interview schedule from 15 November 2016 to 31 December 2016. The study analyzed the data using theories of stigma and the social construction of illness. The study found that most respondents were from the EWS and lacked knowledge about PCOS. The analysis is categorized into four sections: the social stigma attached to PCOS, infertility as a notable outcome of the syndrome, inadequate knowledge regarding the condition, and the social construct surrounding PCOS. The respondents expressed concern about the

disease due to their inability to conform to the socially constructed role of a woman. Women in many parts of Indian society avoid discussing irregular periods until the situation worsens. Infertility is stigmatized among married women, and unmarried women fear future infertility. The study suggests the need for increased awareness and education about PCOS in India, especially among EWS members.

Mishra and Sharma (2022) conducted a study investigating the knowledge and social impact of polycystic ovary syndrome (PCOS) among women in the Jammu district of India. The study involved conducting in-depth interviews with 41 female participants diagnosed with PCOS and receiving medical treatment at Sri Maharaja Gulab Singh Hospital. The results showed that most women had limited knowledge about the condition they were experiencing, and only a few identified it as PCOS. The reasons for seeking medical attention varied based on the women's social status, with married women seeking treatment for infertility to conform to societal expectations. In contrast, unmarried women sought treatment for menstrual irregularities, hirsutism, or acne. The social impact of PCOS significantly influenced women's healthcare-seeking behaviors, as women's roles in Indian society are often shaped by their social status. The study also identified a lack of everyday discourse related to PCOS, resulting in different interpretations and expressions of the same condition. The study emphasizes the need for increased awareness and education about PCOS in India and a more comprehensive approach to addressing its social impact on women.

2.9 Psychological well-being

Alur-Gupta et al. (2019) conducted a cross-sectional study to compare body image distress (BID) scores between women having polycystic ovary syndrome (PCOS) and controls and to explore whether BID mediates anxiety and depression. The study enrolled reproductive-aged women with

PCOS and controls and was conducted in an academic institution. The participants completed various surveys, including the Multidimensional Body Self Relations-Appearance Subscale (MBSRQ-AS), Stunkard Figure Rating Scale (FRS), Hospital Anxiety and Depression Scale (HADS), and PCOS quality of life survey (MPCOS-Q).

The study found that women with PCOS had worse BID scores on all five MBSRQ-AS subscales ($p < 0.01$) compared to controls and more significant differences on the FRS ($p < 0.05$). Furthermore, the prevalence of depressive and anxiety symptoms was significantly higher in women having PCOS than in controls ($p < 0.001$ for both). Most MBSRQ-AS subscale scores significantly correlated with depression, anxiety, and quality of life scores ($p < 0.01$). The association between PCOS/control status and higher anxiety and depression scores was entirely mediated by the appearance evaluation and body areas satisfaction subscales and partially mediated by overweight preoccupation, appearance orientation, and self-classified weight. In conclusion, the study suggests that women with PCOS experience more significant body image distress, depression, and anxiety than controls. Moreover, the study provides insight into the potential mediators of anxiety and depression in women with PCOS, which may help develop interventions to manage mental health outcomes in this population.

Lee et al. (2017) conducted a cross-sectional study to examine the prevalence of eating disorders (EDs) in women with PCOD and the potential effects of EDs on health-related quality of life. The study included 148 women with PCOS and 106 controls who received routine gynecologic care at a university practice between 2015 and 2016. The researchers administered the Eating Disorder Examination Questionnaire (EDE-Q), Night Eating Questionnaire (NEQ), Hospital Anxiety and Depression Scale, and Health-Related Quality of Life Questionnaire (PCOSQ) to the participants. The study's primary outcome measures were EDE-Q and NEQ scores and the prevalence of bulimia nervosa (BN), binge eating disorder (BED), and night eating syndrome (NES). The findings revealed

that women with PCOS had a higher risk of overall abnormal EDE-Q scores than controls. They also had clinically significant elevated scores for shape and weight concerns. An abnormal EDE-Q global score was linked to a high body mass index, elevated depression and anxiety scores, and PCOS. Elevated EDE-Q scores were inversely related to PCOSQ scores. The prevalence of BN, BED, and NES in women with PCOS was, respectively, with no differences compared to controls. The study suggests that women with PCOS may be more susceptible to EDs and may experience detrimental effects on their health-related standards of life. These findings may be crucial for managing PCOS and preventing and treating EDs in this population.

Li et al. (2020) performed a study utilizing rs-fMRI to examine alterations in functional connectivity in the brains of females diagnosed with polycystic ovary syndrome (PCOS). The research involved 41 women recently diagnosed with PCOS and 41 healthy individuals. The participants with newly diagnosed PCOS and healthy controls were matched based on age and education level, all during the menstrual period. The authors analysed the amplitude of low-frequency fluctuation (ALFF) to identify abnormal seed points and measured functional connectivity (FC) values between these seed points and other voxels in the whole brain. They also assessed correlations among clinical indexes, neuropsychological evaluation scores, and neuroimaging data. The results revealed that the PCOS group had higher levels of luteinizing hormone (LH) and serum insulin, worse sleep quality, increased scores for depressive and anxiety states, and impairments in memory and executive function compared to the control group. The study by Li et al. (2020) also discovered that there was a negative relationship between reduced ALFF (Amplitude of Low-Frequency Fluctuations) values in the MFG.L (left middle frontal gyrus), which is associated with poor executive performance and depressive disorders, and plasma insulin levels in subjects with insulin resistance. Furthermore, the investigation discovered a favourable relationship between elevated functional connectivity (FC) strength between

the left middle frontal gyrus (MFG.L) and left inferior frontal gyrus and serum testosterone levels. Additionally, there was a negative correlation between increased FC strength between the serum testosterone levels and the left posterior cingulate gyrus. The left inferior frontal gyrus (IFGtriang.L) and plasma LH levels were correlated. Finally, when the right middle occipital gyrus (MOG.R) was used as the seed point, the study observed a decreased FC strength with the right inferior occipital gyrus (IOG.R) linked to impaired memory.

Brutocao et al. (2018) investigated the prevalence of psychiatric disorders among women with polycystic ovary syndrome (PCOS). The authors systematically reviewed various databases to locate studies that examined the frequency of any psychiatric disorder in adolescent or adult women diagnosed with PCOS, either clinically or biochemically. The authors analysed a total of 57 studies, which included 172,040 patients. They found that women with PCOS were more likely to be clinically diagnosed with depression, anxiety, bipolar disorder, and obsessive-compulsive disorder, but not social phobia or panic disorder. Additionally, the severity of symptoms of depression, anxiety, obsessive-compulsive disorder, and somatization disorders was also higher among women with PCOS compared to those without the syndrome. Although the majority of studies focused on depression and anxiety, and many estimates were unadjusted, the authors concluded that further investigation is necessary to gain a complete understanding of the association between psychiatric disorders and PCOS.

Fernandez, M., Ryswyk, V., Rodgers,., March, Moran Avery, McEvoy., & Davies. (2018) examined the prevalence, pathophysiology, impact, and management strategies of sleep disturbances in women with polycystic ovary syndrome (PCOS). They synthesized the findings of clinic-based and population-based studies indicating that women with PCOS experience more frequent sleep disturbances and disorders, such as obstructive sleep apnea and excessive daytime sleepiness, than

women without the syndrome. While overweight/obesity partially accounts for the association, it is not the sole factor. The pathophysiology of PCOS may contribute to sleep disturbances, including hyperandrogenemia, insulin resistance, and hypothalamic–pituitary–adrenal function alterations. Psychological and behavioral factors, such as anxiety, depression, smoking, consuming alcohol, and having a sedentary lifestyle, also likely play a role. The particular effects of sleep disturbances on the well-being of women with polycystic ovary syndrome (PCOS) are unclear. However, sleep disturbances and PCOS are associated with cardiometabolic health deterioration and increased risk of type 2 diabetes. The authors suggest that interdisciplinary health care for women with PCOS should consider the diagnosis and management of sleep disorders to enhance the quality of life and longer-term health.

Bahman, Hajimehdipoor, Afrakhteh, Bioos, Hashem-Dabaghian, and Tansaz (2018). Bahman et al. (2018) conducted a study to examine the relationship between sleep and polycystic ovary syndrome (PCOS). Sleep and polycystic ovary syndrome (PCOS). They searched medical databases and traditional Iranian medicine (ITM) books for keywords related to sleep and PCOS. Even though sleep disorders are common in PCOS patients, sleep modification is not typically considered in their treatment plan. Both modern medicine and ITM emphasize lifestyle modifications, such as exercise and diet, to manage PCOS. However, ITM also highlights sleep management as an essential scheme for preventing and treating all diseases. The study suggests that incorporating sleep hygiene into lifestyle modification recommendations for PCOS patients may be beneficial.

Zhang, Ye, Tao, Lu, Chen, and Liu (2021) conducted a meta-analysis to examine the prevalence of sleep disorders in women with polycystic ovary syndrome (PCOS) and The link between sleep disruption and within this demographic; there are indicators of risk for heart disease. The authors

systematically searched PubMed and EMBASE databases for observational studies published in English from inception to 21 October 2021. The meta-analysis comprised 18 articles, with 16,152 participants from nine different countries. Their findings showed that women with PCOS had a higher prevalence of sleep disturbance, higher scores on the PSQI, and shorter sleep duration than women without PCOS. The authors also discovered that PCOS patients with sleep disturbance had higher BMI, SBP, DBP, LDL-c, fasting glucose, 2-h glucose, and waist circumference levels and lower HDL-c levels than those without sleep disturbance.

2.10 Mind-body connection

In their study, Zangeneh et al. (2014) explored the relationship between serum levels of neurohormones and sleep duration in women with PCOS. Researchers wanted to understand the relationship between sleep quality and serum levels of several hormones in PCOS patients and non-PCOS infertile women. PCOS is a complicated illness that strikes many women substantial proportion of reproductive-aged women, and is linked to various physiological, metabolic, and psychological disorders. The study involved 77 PCOS patients and 97 infertile women without PCOS as a control group. The researchers used the PSQI sleep questionnaire to evaluate sleep quality. They compared the PSQI scores and serum levels of several neurohormones, including adrenaline, noradrenaline, melatonin, β -endorphin, cortisol, and progesterone, between the two groups. The findings revealed that PCOS patients had lower melatonin and β -endorphin serum levels than the control group. Adrenaline and noradrenaline levels were significantly correlated with sleep duration in the PCOS group, while adrenaline levels were lower in the control group for those who woke up earlier. Except for cortisol, none of the hormones had a significant association with the PSQI global score in either group. Furthermore, women who slept less than eight hours had lower cortisol levels. The authors concluded that changes in cortisol levels in PCOS women could be attributed to disturbed sleep at night,

providing a novel insight into the interactions between sleep-wake cycles and PCOS with specific sleep patterns.

In a systematic review, Benjamin, Kuppusamy, Koshy, Narayana, and Ramaswamy (2021) compared the cortisol levels in women with polycystic ovarian syndrome (PCOS) to normal controls. To achieve this, the authors searched various databases such as Medline, Embase, Pubmed, Science Direct, Google Scholar, and Scopus using MeSH terms. After data abstraction and dual quality assessments, 41 studies were included for meta-analysis. The authors found that the cortisol level in PCOS women was significantly higher than in healthy controls, with a standard mean difference (SMD) of confidence interval (, although there was a high degree of heterogeneity. Further subgroup analysis based on the sample type found that blood cortisol levels had a higher effect size than the overall effect. After examining data, investigators determined that cortisol plays a significant part in the occurrence and progression of PCOS. They further proposed that estimating cortisol levels could serve as a valuable stress marker for identifying the disorder.

Papalou and Diamanti-Kandarakis (2016) conducted a literature review on stress in polycystic ovary syndrome (PCOS). The authors discussed the complexity of PCOS and its relationship to stress, reviewing recent data on the different types of stress that contribute to the syndrome, including metabolic, inflammatory, oxidative, and emotional stress. The authors highlighted that metabolic stress plays a vital role in the pathophysiology of PCOS, and it is present early in life. They also emphasized that all types of stress have severe long-term health implications that worsen the reproductive, metabolic, and psychological issues associated with the syndrome, leading to chronic illness. Given the information, the researchers indicate that dealing with stress could enhance long-term medical results in individuals with PCOS.

In a study conducted by Sahingöz, Uguz, Gezginc, and Gök Korucu (2013), the current prevalence of Axis I and Axis II psychiatric diagnoses in patients with polycystic ovary syndrome (PCOS) was investigated. The study included 73 patients with PCOS and 73 control subjects. The authors utilized structured clinical interviews to detect the presence of psychiatric disorders. Results of the study revealed that the patient group had a significantly higher rate of any Axis I psychiatric disorder, social phobia, generalized anxiety disorder, any Axis II psychiatric disorder, and avoidant personality disorder than the control group. Specifically, 28.8% of women with PCOS had at least one Axis I diagnosis while having one Axis II diagnosis. Social phobia was found to be the most common Axis I disorder, and avoidant personality disorder was the most common Axis II disorder in women with PCOS. Moreover, social phobia, generalized anxiety disorder, and avoidant personality disorder were significantly more prevalent in the patient group compared to the control group. These findings indicate that women with PCOS are at an elevated risk for psychiatric disorders, especially social phobia and avoidant personality disorder.

CHAPTER 3

Research Gap, Rationale, Objectives, And Hypotheses

3.1 Research gap

Research on PCOS has identified significant gaps in both quantitative and qualitative approaches. Quantitatively, further studies are needed to explore anxiety, depression, and other psychological concerns that have been rising—stress among women with PCOS. Understanding the impact of these

issues on quality of life and emotional regulation is crucial, including addressing inconsistent findings, examining demographic variations, and investigating the underlying mechanisms connecting PCOS to mental health outcomes. Qualitatively, more in-depth exploration is required to understand the effectiveness of coping strategies and the social, relationship, and psychological aspects experienced by women with PCOS. Combining quantitative and qualitative approaches through mixed methods studies is essential to comprehensively understand PCOS and its impact on mental health and well-being. Integrating findings from both approaches enhances the development of targeted interventions and support systems, leading to improved mental health outcomes and overall well-being for women affected by PCOS.

3.2 Rationale

Our research involves a quantitative and qualitative study. The quantitative aspect aims to determine the prevalence of depression, anxiety, stress, quality of life, and emotional regulation among women with PCOS compared to those without. The qualitative component explores coping strategies, relationship dynamics, social well-being, and psychological and emotional well-being experienced by women with PCOS. By combining both approaches, we aim to gain a comprehensive understanding of their psychological and emotional experiences, informing potential interventions and support strategies.

3.3 Objectives

Quantitative

1. To determine whether there is a significant difference in the level of depression, anxiety, and stress between women with PCOS and those without PCOS.

2. To determine whether the presence of PCOS has an impact on the quality of life in women with PCOS and those without PCOS.
3. To determine whether the presence of PCOS has an impact on emotional regulation. in women with PCOS and those without PCOS

Qualitative

1. To explore coping strategies employed by women with PCOS.
2. To explore the dynamics of relationships in women with PCOS.
3. To explore social well-being challenges faced by women with PCOS.
4. To explore the psychological and emotional well-being of women with PCOS.
5. To explore the impact of psychosomatic factors on women with PCOS.

3.4 Hypotheses (Quantitative)

- H₁ Participants with PCOS will experience higher level of depression than participants without PCOS.
- H₂ Participants with PCOS will experience higher level of anxiety than participants without PCOS
- H₃ Participants with PCOS will experience higher level of stress than participants without PCOS.
- H₄ Participants with PCOS will have lower quality-of-life than participants without PCOS.
- H₅ Participants with PCOS will have lower level of emotional regulation than participants without PCOS.

3.5 Research Question (Qualitative)

1. What approaches do you employ to manage the difficulties associated with living with PCOD/PCOS, and could you provide an example of a specific situation where a coping strategy proved beneficial for you?
2. How has having PCOD/PCOS affected how you see yourself and your body, and can you describe a specific instance where you struggled with a negative self-image?
3. How has the support you receive from family, friends, and healthcare providers impacted your experience with PCOD/PCOS, and can you describe a specific instance where social support was essential to you?
4. How do you manage your emotions related to PCOD/PCOS, and can you describe a specific instance where emotional management helped manage symptoms?
5. How do you connect your thoughts and emotions to your physical symptoms, and can you describe a specific instance where this connection helped manage your symptoms?
6. How has having PCOD/PCOS impacted your romantic relationships or friendships, and can you describe a specific instance where PCOD/PCOS affected a relationship?
7. Have you ever experienced stigma or stereotypes related to PCOD/PCOS, and can you describe a specific instance where you felt stigmatized or stereotyped because of your diagnosis?
8. What lifestyle changes have you made in response to your PCOD/PCOS diagnosis, and how do you prioritize self-care daily? Can you describe a specific instance where self-care was essential to managing PCOD/PCOS symptoms?
9. How has having PCOD/PCOS affected your mental health and overall well-being, and can you describe a specific instance where you struggled with mental health challenges related to PCOD/PCOS?

10. How have social media and society's beauty standards impacted your experience with PCOD/PCOS, and can you describe a specific instance where social media or society's beauty standards positively or negatively impacted your perception of your diagnosis?
11. Have you observed any specific patterns in your sleep, such as encountering challenges in falling or staying asleep? Do you experience difficulties initiating sleep, frequently waking up at night, or feeling unrefreshed after sleep? Could you share a specific instance where your PCOD/PCOS influenced your sleep and explain how it affected your daily life or overall well-being?

CHAPTER 4

METHOD

4.1 Quantitative

4.1.1 Sample

A total of 140 participants, aged between 18-50 years, were recruited for the study. Out of the total participants, 70 were diagnosed with PCOS, and 70 were not with the condition the sampling method used in this study is a type of non-probability sampling called purposive sampling or selective sampling.

4.1.2 Design

Independent Variables: Polycystic Ovary Syndrome

Dependent Variables: Anxiety, Depression, Stress, Emotional Regulation (cognitive reappraisal and expressive suppression), and Quality of life.

4.1.3 Tools used

1. Emotional Regulation Questionnaire (ERQ)

It is a self-report measure developed by James J. Gross and Oliver P. John in 2003 to assess individual differences in emotion regulation processes. The ERQ measures two distinct emotion regulation strategies: cognitive reappraisal and expressive suppression. The cognitive reappraisal strategy refers to modifying one's emotional response to a situation by reinterpreting the event's meaning in a more positive light. Expressive suppression, on the other hand, means inhibiting the expression of one's emotions, such as by masking facial expressions or keeping emotions to oneself. The Emotional Regulation Questionnaire (ERQ) comprises 10 items, rated on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items are designed to assess cognitive reappraisal (items 1, 3, 5, 7, 8, and 10) and expressive suppression (items 2, 4, 6, and 9). It is recommended by the authors to maintain the original item Order without alterations. The ERQ has been extensively utilized in previous studies investigating emotion regulation, and its psychometric properties have been firmly established. It has shown good internal consistency, test-retest reliability, and construct validity across diverse samples and research settings.

Reliability: The ERQ has been found to have good internal consistency and test-retest reliability. In a study by Gross and John (2003), the internal consistency coefficient for the Cognitive Reappraisal subscale was .79 and for the Expressive Suppression subscale was .73. Test-retest reliability over a one-week interval was .69 for Cognitive Reappraisal and .56 for Expressive Suppression.

Validity: The ERQ has demonstrated good convergent and discriminant validity. In terms of convergent validity, the Cognitive Reappraisal subscale is positively correlated with measures of well-being and negatively correlated with measures of depression. In contrast, the Expressive Suppression subscale positively correlates with measures of anxiety and depression. Regarding discriminant validity, the Cognitive Reappraisal subscale is negatively correlated with measures of neuroticism, while the Expressive Suppression subscale is positively correlated with measures of neuroticism.

Regarding its applications, the ERQ has been used to investigate the role of emotion regulation in various psychological phenomena, including stress, anxiety, depression, and interpersonal relationships. For example, research has found that greater use of cognitive reappraisal is associated with lower levels of anxiety and depression. In comparison, greater use of expressive suppression is associated with higher levels of anxiety and depression. Additionally, the ERQ has been used in clinical settings to assess the efficacy of interventions to improve emotion regulation skills.

2. Quality of Life Scale (QOLS-16)

The QOLS-16 is a self-report tool that evaluates an individual's general quality of life. It was created in 1978 by Thomas R. Flanagan and includes 16 items, each rated on a 5-point scale from 1 (extremely unsatisfied) to 5 (very satisfied) in a Likert format. The QOLS-16 addresses five areas of quality of life, including physical and material well-being, social relationships, participation in community activities, personal growth and fulfillment, and recreational activities.

Reliability: The QOLS-16 has been found to have good internal consistency and test-retest reliability. In a study by Flanagan (1978), the internal consistency coefficient for the QOLS-16 was .92, and test-retest reliability over a one-month interval was .84.

Validity: The QOLS-16 has demonstrated good construct validity. Regarding convergent validity, the QOLS-16 is positively correlated with measures of well-being and life satisfaction and negatively correlated with measures of depression and anxiety. Regarding discriminant validity, the QOLS-16 is negatively correlated with measures of stress and burnout. Regarding its applications, the QOLS-16 was utilized to study the link between quality and various factors, such as physical health, mental health, social support, and life events. For instance, research investigations have revealed that people with higher levels of material and physical well-being report higher levels of overall quality of life. In comparison, individuals with stronger relationships with others report higher satisfaction in their social and community activities. Additionally, the QOLS-16 has been used in clinical settings to assess the impact of interventions to improve quality of life, such as psychotherapy and rehabilitation programs.

3. Depression, Anxiety and Stress Scale (DASS-21)

The DASS-21 is a self-report instrument that aims to evaluate the intensity of symptoms associated with depression, anxiety, and stress. It comprises 21 items developed by Lovibond and Lovibond in 1995, with seven items assigned to each of the three domains. Participants rate each item on a 4-point Likert-like scale, where 0 denotes the item did not apply to them at all, and 3 means the item applied to them very much or most of the time. The DASS-21 has been shown to be a reliable and valid measure of psychological distress in various populations, including clinical and non-clinical samples.

Reliability: The DASS-21 has demonstrated good internal consistency and test-retest reliability across a wide range of populations. The internal consistency coefficients for the subscales measuring depression, anxiety, and stress range from .81 to .97, indicating a high level of reliability. Similarly,

the test-retest reliability coefficients, which assess the stability of the measures over time, range from .70 to .96, further affirming the consistency and dependability of the results.

Validity: The DASS-21 is valid in both convergent and discriminant aspects. Regarding convergent validity, the DASS-21 has been discovered to have a favourable relationship with negative emotions and neuroticism indicators while negatively correlating with positive emotions and psychological well-being measures. Concerning discriminant validity, the DASS-21 can differentiate between depression, anxiety, and stress as distinct concepts rather than just different versions of the same underlying concept.

The DASS-21 has been widely used in research and clinical settings to assess psychological distress and the effectiveness of interventions to reduce symptoms related to depression, anxiety, and stress. The measure is useful in various populations, including adults, adolescents, and children. It was additionally utilized to assess the effectiveness of stressors such as illness, trauma, and natural disasters on mental health. The DASS-21 is a valuable tool for researchers and clinicians to assess psychological distress and monitor treatment progress over time.

4.1.4 Procedure

An online survey was conducted. Participants were recruited through social media platforms and online forums related to women's health. Additionally, gynaecologists and online support groups were contacted through email and respective administrators to request participation in the study. The combined data from all sources were used for analysis. Participants were informed about the research topic and provided specific instructions at each scale's beginning to aid their responses. Prior to commencing the survey, participants provided their informed consent. Data were collected, and scores on each scale were computed using Microsoft Excel. The SPSS software was utilized for the statistical analysis. Software, where independent t-tests were employed to compare the average scores of women with and without PCOS on various measures, including depression, anxiety, stress, quality of life, and emotional regulation. Results were interpreted and reported accordingly.

4.2 Qualitative

4.2.1 Sample

A total of 15 participants, aged between 18-50 years, who were diagnosed with Polycystic Ovary Syndrome, were recruited for the semi-structured interview. The sampling method used in purposive sampling.

4.2.2 Research Design

The study used a descriptive phenomenological design to understand women's lived experiences with PCOS/PCOD. A descriptive phenomenological design is a qualitative research method used to understand individuals' experiences with a particular phenomenon.

4.2.3 Data Analysis

Thematic analysis was utilized as the primary method of data analysis in this study. This method involves identifying patterns or themes within the data and analysing them to gain insight into the participants' experiences. By using thematic analysis as the primary data analysis method, this study provided a detailed and nuanced understanding of the experiences of women with PCOS/PCOD. Braun and Clarke (2006) explain that the thematic analysis comprises different phases. The first phase is "familiarizing oneself with the data." This includes transcribing and reading the data. The second phase comprised "generating initial codes". Third phase is "searching for themes." This involves going through each code and collecting relevant codes to form themes. Fourth phase is "reviewing the themes" which means going through the codes and entire data set once again to check their relation with the themes. The fifth phase is "defining and naming themes." This indicates refining these themes and giving them clear names and presents for analysis. The sixth phase is "producing the report," which involves the final thematic analysis and the write-up of the report. In addition to conducting a thematic analysis to explore the experiences of women with PCOS/PCOD, we also performed a quantitative analysis. As part of this analysis, we calculated the frequency and relative frequency based on the number of participants who responded to specific sub-themes. By tallying the number of individuals whose responses aligned with each sub-theme, we determined the frequency. Additionally, we calculated the relative frequency, which represents the proportion or percentage of participants contributing to each sub-theme relative to the total number of respondents. These quantitative measures provide valuable insights into the prevalence and distribution of experiences, coping strategies, relationship dynamics, social well-being, and psychological and emotional well-being among women with PCOS/PCOD. Together with the qualitative findings obtained through thematic analysis, these quantitative results contribute to a comprehensive understanding of the research topic.

4.2.4 Tools Used

Delve Qualitative Tool

In the present qualitative research, Delve Qualitative Tool was utilized as the primary method of data analysis for conducting thematic analysis. Delve Qualitative Tool is a computer software that has been designed to aid researchers in qualitative data analysis. It has many features that can assist in analysing data by categorizing and coding it, identifying themes, and visualizing it differently. It offers various techniques for coding data, such as tagging, annotating, and highlighting, to help detect patterns and themes. Delve Qualitative Tool provides reporting and visualization options that help present research findings clearly and visually appealingly. It generates reports summarizing the study's key findings and interactive visualizations that enable users to explore data in greater depth. This tool also has features for transcribing, coding and analyzing data that can streamline the data analysis process, saving time for researchers. This program is intended to be essential and straightforward versatile, meaning it could potentially be used with a variety of data kinds and types, including written content, audio recordings, and video files. Majorly used for academic purposes and research settings across several fields, including healthcare, education, and social sciences.

4.2.5 Procedure

The qualitative research procedure involved conducting semi-structured interviews with 15 women diagnosed with PCOD/PCOS. Initial contacts were made with gynaecologists from Delhi NCR to find participants, and additional contacts were obtained from online support groups. Before the interviews commenced, all participants gave their informed consent. The semi-structured interviews explored various aspects of PCOD/PCOS, such as coping mechanisms, relationship dynamics, social stigma, physical symptoms, and coping strategies. Open-end questions were used to encourage participants to share their experiences in-depth (Appendix E). Interviews were conducted over video calls, and

recordings were made with the participants' consent. Verbatim transcription was done for the recordings. Data analysis was conducted using thematic analysis and the Delve Qualitative Tool to code and categorize the data and identify recurring themes, patterns, and commonalities in the participants' experiences. Lastly, as a token of gratitude, participants were given a heartfelt letter expressing appreciation.

5.1 Qualitative

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A thematic analysis was conducted to categorize women's experiences with PCOS and their well-being (Based on the questions mentioned in Appendix E). The analysis identified five main themes and 22 sub-themes,

providing a comprehensive understanding of the participants' experiences. The themes and sub-themes are as follows:

Coping strategies (Sub-theme: Adaptive Coping, Maladaptive Coping and Medical Treatment and Intervention)

Mind-Body Connection (Sub-theme: Psychosomatic Factors and Remission)

Social Well-being (Sub-theme: Shame-Stigma, Healthcare System, Envy, Unrealistic Standards, Isolation, and Social Support)

Psychological Well-being (Sub-theme: Therapy, Cognitive Impairment, Emotional Regulation, Sleep, Emotional Impact, Impairment of normal functioning, Mental Health and Body Image Issues)

Table 1 Demographic characteristics of the participant's

Demographic	Status	(n=15)
Age group	18-25 years	8
	25-35 years	5
	35-45 years	2
Marital status	Single	8
	Married	7
Main symptom	Infertility	6
	Obese	8
	Acne	11
	Hair loss	11
	Hirsutism	12
	Irregular menstruation	13

**Table 2 Thematic Analysis of Women's Experiences with PCOS/PCOD
(n=15)**

Theme	Sub theme	Frequency	Percentage
Mind body connection	Psychosomatic	8	53%
	Remission	11	73%

Psychological Well Being	Counselling	3	20%
	Cognitive Impairment	1	6%
	Emotional Regulation	9	60%
	Sleep	14	93%
	Emotional Impact	13	87%
	Impairment of Normal Functioning	9	60%
	Mental Health	10	67%
	Body Image Issue	15	100%
	Social Wellbeing	Healthcare System	3
Stigma and Shame		7	47%
Envy		3	20%
Unrealistic Beauty Standards		11	73%
Isolation		14	93%
Social Support		9	60%
Relationship Dynamics	Infertility	7	47%
	Repercussion on Relationship	6	40%
	Supportive Partner	5	33%
Coping Strategies	Adaptive Coping	11	73%
	Maladaptive coping	5	33%
	Medical treatments and interventions	6	40%

Mind-Body Connection

The mind-body connection is the intricate relationship between mental and physical well-being, where thoughts, emotions, and behaviours influence physiological states and vice versa.

Sub-theme: Psychosomatic

In the theme of Mind-Body Connection, approximately 53% of women with PCOS/PCOD reported experiencing psychosomatic symptoms. This demonstrates that just more than half of the participants experienced physical symptoms that were influenced or exacerbated by psychological factors. It underscores the significant impact of the mind-body connection in the manifestation and management of PCOS/PCOD. The statements below are provided by the participants, expressing their support for the notion of psychosomatic experiences and emphasizing the intricate relationship between their mental and physical well-being:

"Whenever I am stressed, I have discovered how experiencing negative emotions worsens my PCOS symptoms, making it difficult to manage," Participant 2 shared. "When I am feeling overwhelmed, taking a break for a quick workout at the gym helps me release tension and regain focus," added Participant 9. Participant 13 reflected on their experience: "Over time, I have understood the link between my emotional state and physical symptoms. Stress and anxiety tend to amplify my PCOS breakouts." Participant 4 explained, "Negative thoughts directly affect my body, resulting in physical symptoms like tears, low blood pressure, and cold feet." Lastly, Participant 8 said, "I have learned through trial and error that managing stress using mindfulness techniques, deep breathing exercises, and meditation can alleviate symptoms such as irregular periods and bloating."

Sub-theme: Remission

A substantial proportion of participants, approximately 73%, expressed a sense of remission. This suggests that most women experienced moments of relief or improvement in their condition. These

instances of remission could indicate periods where symptoms were less severe or where individuals experienced a reduction in their PCOS/PCOD-related challenges.

"I have found that making healthier choices boosts my energy levels and motivation to manage my daily activities effectively," said Participant 2. They emphasized, "By focusing on consuming fruits, vegetables, and whole grains, I maintain my energy levels and a healthy weight, which positively impacts my PCOS symptoms." Participant 6 shared their experience "After undergoing weight loss surgery, I made conscious efforts to reduce sugar intake and increase protein consumption. This resulted in improved energy levels, clearer skin, and reduced my PCOD symptoms." Participant 8 explained, "Adopting a balanced and nutritious diet has provided me with increased energy and focus, enabling me to better manage my PCOD symptoms." Meanwhile, Participant 13 highlighted their approach, "Establishing a skincare routine and engaging in regular exercise, including walks, strength training, and yoga, has not only improved my skin and energy levels but has also contributed to fluctuations in my weight." These personal accounts demonstrate the positive impact of healthier choices on energy levels, symptom management, and overall well-being.

Psychological-Well Being

Psychological well-being is a crucial aspect of managing PCOS/PCOD (Polycystic Ovary Syndrome/Polycystic Ovary Disease), as it encompasses various emotional and cognitive factors. The following sub-themes shed light on different dimensions of psychological well-being associated with PCOS/PCOD:

Sub-theme: Counselling

A significant number of women, accounting for 20% of the participants, actively sought counselling to address the emotional challenges linked to PCOS/PCOD. This statistic emphasizes the importance of professional support in managing their mental health effectively. Here are the participants' statements that shed light on the importance of counselling or therapy in managing the emotional and mental challenges associated with PCOS:

"Stress and anxiety associated with PCOS can worsen symptoms," revealed Participant 11. They stated, "The psychologist diagnosed me with anxiety, which did not surprise me since I tend to overthink things." Participant 11 acknowledged the direct impact of stress and anxiety on their PCOS symptoms and recognize the need to address these mental health challenges. On the other hand, Participant 4 emphasized the value of therapy in managing anxiety related to PCOS, said, "Therapy has been valuable in addressing my anxiety related to PCOS. Having a professional who understands my situation and provides me with tools and strategies to manage anxiety has been helpful." They expressed gratitude for the support received from a trained therapist who offers them effective coping mechanisms to navigate the emotional toll of PCOS. Both participants highlighted the significance of addressing anxiety to alleviate its negative effects on PCOS symptoms.

Sub-theme: Cognitive Impairment

Approximately 6% of the participants reported experiencing cognitive impairment. This finding indicates difficulties in cognitive functions such as memory or concentration, highlighting a potential area of concern for individuals with PCOS/PCOD.. Their statements show how brain fog affects their daily lives and cognitive function.

"One of the most frustrating symptoms I experience is brain fog. It feels like a cloud has settled over my brain, and it is difficult to remember even the simplest things," the Participant shared, echoing the challenges individuals face with PCOS. Their description vividly captured the subjective experience of cognitive impairment, likening it to a cloud obstructing mental clarity. They emphasized the struggle to remember essential information, highlighting the frustration and impact of brain fog on memory and cognitive function.

Sub-theme : Emotional Regulation

A substantial majority of women, encompassing 60% of the sample, emphasized the significance of effectively managing their emotions to cope with the emotional ups and downs associated with PCOS/PCOD. This highlights the importance of emotional regulation techniques and strategies in promoting well-being.

"Maintaining a positive mind-set has been crucial for managing my PCOD and overall health," said Participant 7. They emphasized, "I focus on the positive aspects of my life and approach my health journey with resilience and determination." Participant 4 shared a powerful perspective: "I am more than my PCOS and anxiety. I embrace my imperfections and focus on what I appreciate about myself." Participant 15 prioritized their well-being, said , "I focus on my journey, seek support, and educate myself about PCOD to live a healthy, fulfilling life." Participant 8, a mother with PCOD, expressed their gratitude, said, "Conceiving felt like a miracle. I am grateful daily for this miracle." Lastly, Participant 14 emphasized the importance of self-acceptance and education, stating, "I embrace self-acceptance and educate myself about PCOD to manage my symptoms and journey towards better health."

Sub-theme : Sleep

Sleep disturbances were prevalent among the participants, affecting 93% of women. This high percentage underscores the profound impact of PCOS/PCOD on sleep quality and patterns, underscoring the need for addressing sleep-related issues as part of managing psychological well-being. The following statements from participants further support the challenges individuals with PCOD face in managing their sleep:

"I often feel extreme fatigue and struggle with sleep despite getting enough rest," said Participant 1. Despite attempting to prioritize rest, they expressed their ongoing battle with sleep issues. Participant 5 shared their experience: "Improving my sleep hygiene, like establishing a relaxing bedtime routine, has helped." They highlighted the importance of implementing healthy sleep habits to address their difficulties. Participant 7 revealed, "I have difficulty sleeping at times, and it is unclear if it is directly related to PCOD." They acknowledged the uncertainty surrounding the connection between their sleep troubles and PCOD. Participant 3 admitted the toll that sleep troubles have taken on their mental health, confessed, "Sleep troubles took a toll on my mental health, leaving me irritable and unfocused. My mind races with thoughts and worries even when my body needs rest." Participant 13 explained the impact of hypersomnia, "Hypersomnia causes excessive daytime sleepiness, making it difficult to sleep at night." They shared their approach to utilizing relaxation techniques like meditation to prepare for sleep. Lastly, Participant 15 expressed the draining effects of insomnia on their daily life, further compounded by irregular periods. They shared, "Insomnia is draining and affects my daily life. Irregular periods add to the challenge, leaving me feeling lethargic and uninterested in activities."

Sub-theme: Emotional Impact

An overwhelming majority of women, accounting for 87% of the participants, reported experiencing significant emotional impact due to PCOS/PCOD. This statistic emphasizes the emotional toll that PCOS/PCOD can have on an individual's well-being. The following statements from participants illustrate the emotional challenges associated with PCOD.

"I have experienced weight gain and difficulty losing weight due to PCOD," said Participant 4. They further expressed, "Despite my efforts, it feels like an uphill battle to shed those extra pounds." Participant 9 shared their struggle with weight management, "PCOD has made it challenging for me to maintain a healthy weight. I constantly feel frustrated with my body and the lack of progress." Participant 12 expressed their frustration, "The weight gain caused by PCOD has affected my self-esteem. It is disheartening to see the numbers on the scale increase despite my efforts to eat healthily and exercise regularly." Participant 16 acknowledged the impact of PCOD on weight, "PCOD has made weight management a constant struggle for me. It feels like I have to work twice as hard to see any progress." Participant 18 reflected on their experience with weight gain "Dealing with PCOD-related weight gain has been emotionally challenging. Maintaining a healthy weight is a constant battle, and it takes a toll on my self-confidence."

Sub-theme : Impairment of normal functioning

A substantial proportion of participants, specifically 60%, reported impairment in their normal daily functioning due to the challenges posed by PCOS/PCOD. This highlights the disruptive nature of PCOS/PCOD on various aspects of daily life, including work, relationships, and other activities.

"My periods involve severe pain and heavy bleeding. It feels like my internal organs are being wrung

and squeezed. The pain impairs my ability to function normally," shared Participant 14. Participant 9 reflected on their challenges, "It is challenging to concentrate on work or enjoy social events when all I can think about is how tired I feel. I can relate to my friends' experiences of managing PCOS. Dealing with the symptoms can be frustrating and exhausting." Participant 12 emphasized the common occurrence of mood swings with PCOD, "Mood swings are quite common with PCOD, and they often leave you feeling low and unmotivated." Participant 7 pointed out the challenges they face due to the lack of restful sleep and physical discomfort, "The lack of restful sleep and physical discomfort make it challenging to focus on daily tasks or enjoy hobbies and social activities." They highlighted the impact of these symptoms on their ability to engage fully in their daily life and find enjoyment in various activities.

Sub-theme: Mental Health

The impact of PCOS/PCOD on mental health was highlighted by 67% of women. This statistic emphasizes the need for mental health support and resources to effectively address the psychological implications associated with PCOS/PCOD. Participants have shared their experiences and concerns, highlighting the impact of PCOD on mental health.

"My PCOS symptoms flared up during a job interview, making me feel bloated and uncomfortable. Anxiety made it hard to focus, leaving me defeated and anxious," shared Participant 11. Participant 6 opened up about their experience at work, "At work, I experienced intense anxiety with a racing heart and difficulty breathing. Coping with PCOD is challenging, especially with a history of eating disorders and gastritis." Participant 15 reflected on the anxiety and stress related to conceiving, "PCOS brings anxiety and stress about conceiving, impacting my mental well-being. It can lead to depression and affect motivation." Participant 9 shared their experience after weight loss surgery,

"After weight loss surgery, complications triggered anxiety and despair, overwhelming me." They highlighted the emotional struggles they faced due to the surgery and the impact it had on their mental well-being.

Sub-theme: Body image issues

Every woman participating in the study, accounting for 100% of the sample, expressed concerns about their body image. This unanimous response illustrates the profound effect PCOS/PCOD can have on an individual's body perception, emphasizing the importance of addressing body image issues in promoting psychological well-being., with participants sharing their experiences:

"I feel like a gorilla half the time. Seeing my body in the mirror is difficult due to excessive hirsutism caused by PCOS," expressed Participant 10. Participant 8 shared their feelings of being overweight and their facial discomfort, "I feel overweight, and my face feels heavy and swollen. I avoid mirrors during that time. Wearing oversized t-shirts helps me hide my body shape." Participant 11 expressed their distress over their stomach and the impact of thinning hair on their self-image,said "My stomach distresses me despite weight loss surgery. Thinning hair affects my self-image." Participant 7 shared their struggle with body image, said, "I avoid looking in the mirror and feel sad comparing myself to old photos when I was slimmer." They emphasized the negative impact of comparing themselves to past images on their self-esteem and body image.

Social- Wellbeing

Social well-being refers to the overall quality of an individual's social interactions, relationships, and sense of belonging within their community. It encompasses various aspects of social life, including the support and understanding received from others, the impact of societal attitudes and norms, and the

availability of social networks. The following proportions shed light on sub-themes influencing social well-being among individuals with PCOS/PCOD:

Sub-theme : Healthcare System

The proportion of 20% of women facing challenges with the healthcare system indicates areas for improvement in the support and services provided to individuals with PCOS/PCOD. This suggests better access to healthcare, specialized care, and tailored treatment options to meet their specific needs. The following statements support the experiences and concerns of individuals within this subtheme:

"I often feel frustrated and dismissed when medical professionals and acquaintances make dismissive comments like 'just exercise more' or 'it is all in your head.' These comments perpetuate the stigma surrounding PCOS and make it harder for me to cope," expressed Participant 15, highlighted the negative impact of judgment and lack of understanding they face from others. Participant 13 shared their experience of being mislabelled with different mental health conditions by doctors and hospitals, added to their confusion and frustration. They expressed, "It took until I was 38 to discover I had PCOS. Dealing with PCOS has been challenging, and the healthcare community has not provided much support." They expressed their disappointment with the healthcare system and the lack of adequate support they received during their journey. Additionally, Participant 13 discussed the lack of understanding and support from medical professionals, said, "I've experienced a lack of support from medical doctors who show little understanding of PCOS. It is disheartening when they judge and doubt my efforts to lose weight, not realizing how challenging it is due to PCOS." They emphasized the frustration they felt when their efforts are undermined and the difficulty they faced in finding proper support and empathy from healthcare providers.

Sub-theme : Stigma and shame

The proportion of 47% of participants experiencing stigma and shame related to their PCOS/PCOD diagnosis highlights negative societal attitudes and stereotypes associated with the condition. This stigma can lead to embarrassment, isolation, and decreased self-esteem, impacting social well-being.

"When I was younger, negative comments about my appearance from relatives made me feel self-conscious. Being diagnosed with PCOS in grade 8 was challenging without social media pressures," shared Participant 12, reflected on the impact of negative comments and the difficulties they faced during their diagnosis. Participant 9 discussed the hurtful comments made by relatives regarding their ability to marry and conceive, said, "Relatives made hurtful comments about my ability to marry and conceive, adding to my insecurities." They highlighted the emotional impact of such comments and the added pressure it puts on them. Participant 11 shared their frustration when a salesperson suggested covering their facial hair, along with the insensitivity of their family and friends, said, "A salesperson suggesting covering my facial hair angered me. My family downplays my symptoms, and friends make insensitive comments." They expressed the hurt and frustration caused by these interactions. Participant 7 recalled an invasive question about their difficulty getting pregnant due to PCOS, said "At a party, someone asked invasive questions about my difficulty getting pregnant due to PCOS, implying it was my fault."

Sub-theme : Envy

The proportion of 20% of women reporting envy towards others suggests a potential issue related to comparisons in fertility, body image, or overall well-being. Such comparisons may arise due to societal pressure and unrealistic expectations, contributing to feelings of inadequacy and impacting social relationships. The following statements support the challenges faced by individuals with PCOS in dealing with envy:

"Social media can still trigger negative thoughts for me, especially when I see other moms who seem to have it all together. It is hard not to compare myself and my family to unrealistic standards," expressed Participant 10, highlighted the challenges of comparison and the negative impact of social media on their self-esteem. Participant 13 shared their mixed emotions when witnessing confident individuals comfortable in their own skin, said "Seeing confident people in their own skin makes me happy for them, but also sad for myself." They revealed the complex emotions they experience, finding joy in others' confidence while also feeling a sense of sadness about their own self-image. Participant 8 expressed their struggle with infertility and the emotions that arise from witnessing others easily getting pregnant, stated, "It's upsetting to see others easily getting pregnant while I struggle with infertility. It's challenging to witness my friends and family effortlessly experiencing something that should come naturally." They highlighted the difficult emotions that arise from the comparison and the frustration of their own fertility challenges.

Sub-theme : Unrealistic Beauty standards

The proportion of 73% of participants feeling the impact of unrealistic beauty standards highlights the potential exacerbation of body image concerns and self-esteem issues associated with PCOS/PCOD. These standards can contribute to social pressures and dissatisfaction, affecting social interactions and

overall well-being. The following statements support the impact of unrealistic beauty standards on individuals with PCOS:

"I struggle with body image due to unrealistic beauty standards in media and ads. Seeing 'perfect' bodies triggers negative emotions," expressed Participant 15. "PCOD adds to the pressure of conforming to beauty standards. Media's portrayal of 'perfect' women is disheartening. Beauty does not equal health," further emphasized Participant 15. "Social media reminds me of my flaws. Perfect bodies and flawless skin affect my self-esteem," added Participant 5.

Sub-theme : Isolation

The significant proportion of 93% of women expressing feelings of isolation emphasizes the potential loneliness and lack of understanding they may face in their social circles. This highlights the importance of creating supportive environments, raising awareness, and fostering inclusive communities to address the social isolation experienced by individuals with PCOS/PCOD. Here are some statements highlighting the impact of social isolation in PCOS:

"Social events and eating out make me anxious because I worry about how my food choices will affect my weight," expressed Participant 9. "I regret not taking chances to make friends and build meaningful relationships due to fear and insecurity," shared Participant 10. "I avoid parties and events where I might have to eat unhealthy food, feeling left out and frustrated. It's challenging to explain my dietary restrictions to friends who don't fully understand," revealed Participant 7. "I drifted away from old friends because I struggled to express my symptoms, and I felt they couldn't comprehend or support me. I now seek empathy from my partner and a small group of friends who also have PCOD," explained Participant 11. These participants highlighted the impact of social

situations on their anxiety and the difficulties they faced in building relationships and navigating dietary restrictions. They also expressed the challenges of expressing their symptoms and finding understanding and support from others.

Sub-theme : Social Support

The proportion of 60% of participants receiving social support emphasizes the importance of a supportive network in managing the challenges of PCOS/PCOD. Social support can provide emotional reassurance, understanding, and practical assistance, promoting social well-being and enhancing the overall quality of life.

"I'm grateful for my supportive friend during tough times. Talking to someone can make a world of difference," expressed Participant 12. "Finding online communities for women dealing with the same issue were like a ray of sunshine. Connecting with understanding women changed everything," further shares Participant 12. Participant 7 reflected, "Embracing body positivity reminds me that I'm not alone. Beauty comes in all shapes and sizes." Participant 9 shared their personal experience, stated, "By discussing my experiences, I've promoted awareness about PCOD. Social media has helped me access accurate information and take control of my health." Participant 11 added, "Prominent figures like Kareena Kapoor Khan sharing their experiences has increased awareness and reduced stigmas surrounding PCOD." These participants highlighted the importance of support systems, online communities, body positivity, sharing experiences, and the role of social media and influential figures in raising awareness and promoting understanding about PCOD and related issues.

Relationship Dynamic

Relationship dynamics examines how PCOS/PCOD (Polycystic Ovary Syndrome/Polycystic Ovary Disease) can impact romantic relationships and the various aspects involved. Several key proportions shed light on this subject. The sub-themes of infertility, repercussions on romantic relationships and a supportive partner all relate to different aspects of relationship dynamics that are impacted by PCOS.

Sub-theme : Infertility

A significant proportion of women, specifically 47%, reported that PCOS/PCOD hurt their fertility. This statistic highlights the direct correlation between PCOS/PCOD and difficulties in conceiving, which, in turn, can have profound consequences on relationships. The emotional and relational challenges individuals and couples face are brought to the forefront, emphasizing the complexity of managing PCOS/PCOD within the context of a romantic partnership. Here are some statements that support this subtheme:

"PCOS and fertility challenges are tough; friends conceiving easily while I struggle. Pregnancy losses and constant monitoring affect my mental health," shared Participant 6. Participant 8 revealed, "Diet monitoring, weight loss struggles, and difficulty conceiving take a toll. It is an endless, discouraging struggle." Participant 12 clarified, "My partner is not the cause, but infertility impacts my well-being. Doubts arise, questioning my ability to have children." Participant 15 expressed, "Fear of another miscarriage consumes me, leading to stress and depression. Conceiving with PCOD is challenging. Seeing others easily conceive is upsetting." Participant 14 added, "Conceiving with PCOS was a real problem. Tried everything, but it was tough." These participants highlighted the emotional and physical challenges associated with PCOS, fertility struggles, pregnancy losses, monitoring, self-

doubt, and the impact on mental well-being. They also emphasized the difficulties of witnessing others easily conceiving while facing their own challenges.

Sub-theme : Repercussion on relationship

Among the participants surveyed, 40% experienced negative repercussions on their relationships due to PCOS/PCOD. This statistic underscores the strain that this condition can place on intimate connections. It suggests that the challenges presented by PCOS/PCOD extend beyond fertility and impact the overall dynamics and well-being of relationships. Here are some statements supporting this sub-theme:

"PCOS has affected one of my relationships due to mood swings, leading to a heated argument and a requested break," Participant 6 shared. "I unintentionally lashed out at my husband during a moment of extreme anxiety, realizing the importance of self-care and symptom management for our relationship," Participant 13 recalled. "PCOS negatively impacts my sex life with decreased drive, dryness, and painful intercourse, making it challenging to discuss with my partner," Participant 7 explained. "We've been struggling to conceive, and my partner initially blamed himself for our difficulties," Participant 9 revealed. "Trying to conceive has been incredibly difficult for me. I constantly feel the need to monitor my husband's behaviour, almost like being his personal health coach," Participant 6 shared. "I find myself urging him to give up sugary sodas and pleading for a switch to briefs, all in an effort to remind him of what's important for our chances of getting pregnant."

Sub-theme : Supportive Partner

In navigating the difficulties associated with PCOS/PCOD, 33% of women identified the role of a supportive partner. This proportion highlights the crucial significance of understanding, empathy, and support from a partner when dealing with the challenges posed by PCOS/PCOD. It underscores the importance of having a partner who is knowledgeable about the condition and actively provides emotional support and assistance.

"My long-distance partner's support and helpful videos have been a lifesaver for me. They have eased my painful cramps and made dealing with PCOS a little bit easier," Participant 10 expressed. "I am grateful for my husband's love and support. He keeps me positive and focused, which helps me navigate through life with PCOS," Participant 8 shared. "My partner is my rock, always by my side. They understand and support my struggles, and together, we are determined to make our dreams come true," Participant 11 expressed with gratitude.

Coping Strategies

Coping strategies are individuals' behavioural and psychological approaches to manage and adapt to challenging situations. In the context of PCOS/PCOD (Polycystic Ovary Syndrome/Polycystic Ovarian Disease), different coping strategies can be observed among women. This presents three main sub-themes of coping strategies and their respective proportions, shedding light on the experiences and needs of women dealing with PCOS/PCOD.

Sub-theme : Adaptive Coping

Approximately 73% of women employed adaptive coping strategies to manage the challenges associated with PCOS/PCOD. This proportion indicates the resilience and ability of these women to

adapt effectively to the condition. Adaptive coping mechanisms refer to strategies that promote positive emotional well-being, problem-solving and healthy lifestyle choices. These may include seeking social support, engaging in physical activity, practicing stress management techniques, and adopting a balanced diet. The significant number of women utilizing adaptive coping strategies highlights their proactive approach to addressing and managing the symptoms and difficulties related to PCOS/PCOD.. Here are some statements related to this:

Participants 10 expressed "I am careful about what I eat during my menstrual period. I try to consume more iron-rich foods like leafy greens, beans, and nuts to help manage my heavy bleeding. Additionally, I limit my intake of caffeine, alcohol, and sugar as these can exacerbate my symptoms. "Participant 4 shared "I have discovered that dancing and playing with my pet can be a great way to manage my emotions related to PCOS. When I'm feeling stressed or anxious, I put on some music and dance like no one is watching. When I feel overwhelmed, I allow myself to cry if I need to or write down my emotions if there's no one around to talk to. It helps me to release the negative energy and feel more grounded. "Participant 13 shared "I have found that I'm able to manage my symptoms even when indulging in some unhealthy foods. That being said, I am careful about what I eat and try to limit myself to only one unhealthy food item per day. "Participant 1 revealed "I have to spend hours each day trying to hide the dark, rough hairs that pop up on my chin, cheeks, and upper lip. Shaving is another nightmare that I have to endure daily. I use razors, epilators, and electric trimmers to remove the hair. I also have to spend a lot of money on high-end cosmetics that claim to cover the stubborn stubble. I use makeup techniques like concealer, foundation, contouring, and highlighting to give the illusion of smooth skin but it's a never-ending battle. "Participant 7 shared "I find that playing with my pet helps me feel more relaxed and happy which in turn helps alleviate my symptoms. Then one day, I decided to visit a spiritual place like a mosque or gurudwara to find peace and calm..."

Sub-theme : Maladaptive coping

Around 33% of participants acknowledged using maladaptive coping mechanisms. This proportion suggests the need for support and guidance in adopting healthier coping strategies. Maladaptive coping mechanisms are typically ineffective or harmful strategies employed to deal with stressors, which can exacerbate the negative effects of PCOS/PCOD. Examples of maladaptive coping strategies may include avoidance, substance abuse, emotional withdrawal, or engaging in self-destructive behaviours. The presence of a significant percentage of women resorting to maladaptive coping strategies underscores the importance of providing appropriate resources, education, and interventions to empower them with healthier alternatives. Here are some statements related to this theme:

"At first, I tried avoiding triggers, thinking it would help alleviate my fears, but I soon realized it only made my fears worse. I learned that it's better to let my feelings out and address them rather than suppressing them," Participant 9 reflected. "I haven't found effective ways to manage my symptoms yet, but I understand the importance of taking care of myself. I am committed to finding ways to prioritize my well-being," Participant 8 acknowledged. "In March, my mental health was really suffering. I found myself resorting to self-deprecating humour as a coping mechanism to avoid sharing my struggles with others. It was a way for me to mask my pain and put on a brave face," Participant 11 shared honestly.

Sub-theme : Medical treatments and interventions

- Approximately 40% of women utilized medical treatments and interventions to address their PCOS/PCOD symptoms. This proportion highlights the significance of medical interventions in the management of PCOS/PCOD. Medical treatments may include hormone therapy, oral contraceptives,

insulin-sensitizing agents, or other medications aimed at addressing specific symptoms and complications associated with the condition. By utilizing medical treatments and interventions, women seek professional medical guidance and support to alleviate the physical manifestations of PCOS/PCOD and improve their overall well-being. Here are some statements supporting this theme:

"I take my prescribed medication to manage PCOS symptoms," Participant 6 stated, emphasizing the importance of adhering to the prescribed treatment. "The prescribed medications, myoinositol and metformin, have made a significant difference in managing my PCOS symptoms," Participant 4 shared, highlighting their positive experience with these specific medications. "Unfortunately, weight loss surgery brought complications for me, and I continue to experience hair loss," Participant 1 disclosed, shedding light on the challenges they faced despite the intervention. "While hormonal pills caused emotional turmoil for me, I have found effective ways to manage and cope with the emotional impact," Participant 3 revealed, demonstrating their resilience in dealing with the side effects of hormonal therapy.

5.2 Quantitative

For the data analysis, the mean and standard deviation were computed for all the variables. The independent variable was the presence or absence of PCOS, while the dependent variables were the scores on depression, anxiety, stress, quality of life, and emotional regulation. Independent t-tests were conducted to compare the mean scores of women with PCOS and those without PCOS using SPSS 22.0 software.

The present study included both PCOD and Non-PCOD groups, and descriptive statistics were computed for all the scales and their subscales (Table 1). The computed statistics mainly included the mean and standard deviation for the various measures.

Table 3: Descriptive Statistics for PCOD and Non-PCOD Groups (Table 1)

Variable	Groups	Mean	Std. Deviation	N
Stress	PCOD	19.428	9.757	70
	Non PCOD	11.742	8.707	70
Anxiety	PCOD	14.457	10.009	70
	Non PCOD	9.057	8.366	70
Depression	PCOD	17.685	10.542	70
	Non PCOD	10.571	11.118	70
Cognitive Reappraisal	PCOD	4.578	1.144	70
	Non PCOD	4.602	1.106	70
Expressive Suppression	PCOD	3.714	1.333	70
	Non PCOD	3.978	1.279	70
Quality of Life	PCOD	79.085	15.190	70

Non PCOD	86.414	12.292	70
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For the DASS-21 scale, the mean Stress scores for the PCOD and Non PCOD groups were 19.428 (SD=9.757) and 11.742 (SD=8.707) respectively, the mean Anxiety scores for the PCOD and Non PCOD groups were 14.457 (SD=10.009) and 9.057 (SD=8.366) respectively, and the mean Depression scores for the PCOD and Non PCOD groups were 17.685 (SD=10.542) and 10.571 (SD=11.118) respectively. For the Emotional Regulation Questionnaire, the mean scores for Cognitive Reappraisal for the PCOD and Non PCOD groups were 4.578 (SD=1.144) and 4.602 (SD=1.106) respectively, and the mean scores for Expressive Suppression for the PCOD and Non PCOD groups were 3.714 (SD=1.333) and 3.978 (SD=1.279) respectively. For the Quality Of Life Scale mean scores for the PCOD and Non PCOD groups were 79.085 (SD=15.190) and 86.414 (SD=12.292) respectively.

Table 4 . Independent t-tests were conducted to investigate the differences in the scores of all the scales between the PCOD and Non PCOD groups.

Variable		T	Df	Significance (2-tailed)
Stress	Equal variance assumed	4.917	138	.000
	Equal variance is not assumed	4.917	136.249	.000

Anxiety	Equal variance assumed	3.463	138	.001
	Equal variance is not assumed	3.463	133.788	.001
Depression	Equal variance assumed	3.885	138	.000
	Equal variance is not assumed	3.885	137.612	.000
Cognitive Reappraisal	Equal variance assumed	-.125	138	.901
	Equal variance is not assumed	-.125	137.848	.901
Expressive Suppression	Equal variance assumed	-1.196	138	.234
	Equal variance is not assumed	-1.196	137.761	.234
Quality of Life	Equal variance assumed	-3.138	138	.002
	Equal variance is not assumed	-3.138	132.249	.002

The results indicated a significant difference in the scores for all the scales of DASS-21 between groups, namely Stress ($t(138) = 4.917, p < 0.001$), Anxiety ($t(138) = 3.463, p = 0.001$), and Depression ($t(138) = 3.885, p < 0.001$). Additionally, a significant difference was found in the scores

for Quality of Life ($t(138) = -3.138, p = 0.002$). However, both the facets of the Emotional Regulation Scale (Cognitive Reappraisal and Expressive Suppression) showed no significant differences between the groups. These findings suggest that individuals with PCOD experience significantly higher levels of stress, anxiety, depression, and lower quality of life as compared to their non-PCOD counterparts

CHAPTER-6

DISCUSSION

The present study aimed to study Depression, Anxiety, Stress, Emotional Regulation and Quality of Life in women with Polycystic Ovary Syndrome and without Polycystic Ovary Syndrome. Along with a quantitative study and a qualitative study was conducted.

For this purpose, both quantitative and qualitative methods were used. The study used a between-group design to compare the level of depression, anxiety, stress, quality of life, and emotional regulation in women with PCOD and women without PCOD. Also, a descriptive phenomenological design to understand the lived experiences of women with PCOS/PCOD was used.

The first hypothesis stated that Participants with PCOS will experience higher level of depression than participants without PCOS was confirmed. Previous studies have also found a significant relationship between PCOS and anxiety and depression. The study conducted by Hasan et al. (2022) in Bangladesh revealed a high prevalence of mental health disorders, such as loneliness, generalized anxiety disorder, and depressive illness, among women with PCOS. Factors such as obesity, financial condition, and

birth control method were identified as contributing factors to developing mental health disorders. Delanerolle et al. (2022) conducted a systematic review that included 30 studies and reported a significant association between PCOS and depressive and anxiety symptoms. Blay et al. (2016) found higher rates of anxiety and depression in patients with PCOS compared to women without PCOS. The study concluded that women with PCOS have increased depression, anxiety, negative body image, and poor psychological functioning compared to women without PCOS. To enhance positive mental health in women with PCOS, it is advisable to encourage a healthy lifestyle, create public awareness, and provide appropriate treatment.

After analysing the qualitative data from the interviews, we found several compelling statements supporting this hypothesis. These statements shed light on the emotional challenges faced by women living with PCOS and highlight the prevalence of depression within this population. Throughout the interviews, participants consistently expressed sadness, hopelessness, and frustration associated with their PCOS diagnosis. They discussed the various physical symptoms they experienced, such as weight gain, hirsutism, and menstrual irregularities, which significantly impacted their self-esteem and body image. Many participants revealed that these physical manifestations of PCOS contributed to a decline in their mental well-being and heightened their vulnerability to depression.

- *"PCOS can lead to depression. Describing the pain and discomfort every month can be challenging, as the emotional pain of feeling that my body is not functioning as it should be just as debilitating. Furthermore, depression is not only about physical pain, but it's also about the difficulty of dealing with PCOS." Participant 9 "I want to tell others that they are not alone in their struggles. Both depression and PCOD are natural conditions that can profoundly affect an individual's life. They cannot be disregarded or resolved with a quick fix. Overcoming these*

challenges requires time, patience, and supportive care." Participant 6

The second hypothesis stated that " Participants with PCOS will experience higher level of anxiety than participants without PCOS" This hypothesis was also confirmed, supporting the previous. Dokras et al. (2011) showed that females diagnosed with PCOS had a higher incidence or prevalence of anxiety symptoms than the control group. Cooney et al. (2017) also found that women with PCOS had a higher incidence or prevalence of depressive or anxiety symptoms than the control group, even when BMI was matched. Dybciak et al. (2022) established that women with PCOS had elevated levels of anxiety, depression, and ego-resiliency compared to healthy women. Finally, Månsson et al. (2008) showed that women with PCOS had a higher lifetime incidence of depressive episodes, social phobia, and eating disorders compared to controls. The studies suggest that anxiety and depression should be routinely screened for in women with PCOS. Evaluating their resources to cope with chronic stress is essential to optimize therapeutic interventions. Potential contributors to anxiety symptoms, such as hirsutism, obesity, and infertility, should be specifically investigated in women with PCOS. Additionally, passive stress-coping strategies should be addressed, and resources for developing resiliency should be provided. Finally, women with PCOS should be monitored for suicidal ideation and behaviour as they may be at higher risk.

The qualitative analysis revealed several statements supporting the hypothesis that individuals with PCOS tend to experience higher levels of anxiety. These statements emerged from the narratives and perspectives shared by the participants during the interviews, providing an in-depth understanding of their lived experiences. The following statements highlight the participants' experiences related to anxiety:

"Initially, I was hesitant to see a psychologist, but my gynaecologist explained how stress and anxiety associated with PCOS could worsen the symptoms, making it challenging to manage. Consequently, the psychologist was able to diagnose me with anxiety, which did not come as a surprise since I tend to overthink things, particularly concerning my health." Participant 12 *"I have noticed that specific hormonal imbalances can trigger anxiety attacks, which can be extremely overwhelming and hard to control."* Participant 13 *"In a job interview, I was already nervous about the interview, but my PCOS symptoms were flaring up, causing me to feel bloated and uncomfortable. My anxiety made it hard to focus, and I struggled to answer the interviewer's questions. After the interview, I felt defeated and anxious about the outcome."* Participant 11

The third hypothesis was " Participants with PCOS will experience higher level of stress than participants without PCOS." This hypothesis was also confirmed, supporting the previous. The studies above highlight the association between stress and Polycystic Ovary Syndrome (PCOS) in women. The first two studies (Sulaiman et al., 2017; Basu et al., 2018) show that women with PCOS experience higher stress levels and are at greater risk of developing depression, anxiety, and stress than women without PCOS. Additionally, the study by Basu et al. (2018) shows that the PCOS population has increased salivary cortisol levels and α -amylase activity, suggesting a sustained stress scenario in their system. This stress can also contribute to body composition alterations among PCOS patients. The study by Canavatchel (2014) suggests that women with PCOS have a higher baseline cortisol level than healthy controls, which could contribute to their experience of stress. The study calls for future research to explore other psychological and physiological factors contributing to the experience of stress in women with PCOS. Finally, the study by Goyal et al. (2021) explores the correlation between stress and symptoms of PCOS among female students. The study highlights that many respondents reported decreased efficiency due to a lack of sound sleep caused by situational stress. Modifying

lifestyle and dietary habits could control and improve the situation. However, a healthy lifestyle alone is not a complete cure for PCOS. The studies suggest a significant correlation between stress and PCOS in women. Women with PCOS experience higher levels of stress and the risk of depression is higher, anxiety, and stress compared to women without PCOS. Additionally, stress can contribute to body composition alterations among PCOS patients. Finding of the study suggests healthcare professionals to consider the psychological needs of women with PCOS and to develop strategies to manage stress in this population.

Through the qualitative analysis conducted in this study, we found compelling evidence supporting the hypothesis that individuals with Polycystic Ovary Syndrome (PCOS) tend to experience higher stress levels. By delving into the participants' narratives and perspectives during in-depth interviews, we gained valuable insights into their lived experiences. The following statements highlight the participants' experiences related to stress:

"Since receiving my diagnosis of PCOD, I have experienced challenging and stressful days. Initially, the diagnosis left me feeling overwhelmed and uncertain about what the future holds for my health, fertility, and quality of life. As a result, I have been constantly stressed, struggling to maintain a sense of balance..." Participant 7".....*my emotional and physical health are connected, and I need to take steps to manage my stress levels," Participant 5*

The fourth hypothesis was "Participants with PCOS will have lower quality-of-life than participants without PCOS." This hypotheses was also confirmed, supporting the previous. Eisenberg et al. (2021), Behboodi Moghadam et al. (2018), Tabassum et al. (2021), and Bahri Khomami et al. (2015) have conducted studies to evaluate the impact of PCOS on QOL in women. The studies have found that

women with PCOS have poorer QOL scores compared to women without PCOS, and various factors affect their QOL. Hirsutism, infertility, menstrual irregularity, and increased body mass index are significant factors that impact QOL in PCOS women. As per the findings considering the psychological aspects of PCOS management and providing psychological care to PCOS patients during their care. Healthcare providers must evaluate each clinical feature of PCOS separately and design management strategies considering both psychological and physical manifestations. The results of these studies can help healthcare professionals to develop personalized management plans for women with PCOS and improve their QOL. PCOS can significantly impact the QOL of women. More study is needed to determine the most effective management strategies for PCOS patients that can enhance their QOL and overall well-being. Understanding the factors affecting QOL in PCOS patients is crucial for developing personalized management. Ultimately, the goal should be to provide comprehensive care that improves the physical, mental, and emotional health of women with PCOS.

Thematic analysis of our qualitative study revealed a compelling set of statements that bolster our hypothesis. These statements provide valuable insights into the participants' experiences and perceptions, shedding light on the profound impact of PCOS on their overall quality of life. Through this analysis, we gained a deeper understanding of the challenges and implications faced by individuals with PCOS, affirming the association between PCOS and poorer quality-of-life scores compared to women without PCOS. The following statements highlight the participants' experiences:

"It feels like my body is perpetually confused, unsure when it should be awake or asleep, which can disrupt my daily routine and be frustrating." Participant 13 *"I am constantly on edge, waiting for the next symptom to arise. I have had to make significant lifestyle changes and invest much time, energy, and money into managing this condition."* Participant 9 *"PCOD has completely consumed my life,*

leaving me feeling physically and emotionally drained and robbing me of any sense of normalcy."

Participant 6

The fifth hypotheses stated that " Participants with PCOS will have lower levels of emotional regulation than participants without PCOS." this hypothesis was not confirmed. The lack of significant differences in the emotional regulation strategies used by women with and without PCOS is an interesting finding. Emotional regulation strategies are known to play a crucial role in coping with stress and managing negative emotions. However, the present study found that women with PCOS did not differ significantly from women without PCOS in their use of cognitive reappraisal or expressive suppression. This suggests that emotion regulation strategies may not be significant in terms of mental health problems in women with PCOS. Other studies, though, reveal that the reverse also holds true. Meenakshi and Fenn (2018) found that women with PCOS had significantly higher levels of depression and anxiety and lower levels of emotional regulation than those without PCOS. Veltman-Verhulst et al. (2012) conducted a comprehensive meta-analysis. They found that women with PCOS experienced significantly higher emotional distress, including depression, anxiety, and emotional quality of life subscales, than control populations. Similarly, Blay et al. (2016) conducted a meta-analysis and revealed that the rates of anxiety and depression symptoms were higher in patients with PCOS compared to women without PCOS. However, Javed et al. (2022) found that resilience and emotional regulation skills, specifically cognitive reappraisal and expressive suppression, were positively correlated with marital satisfaction in females diagnosed with PCOS. Additionally, Wang et al. (2023) identified three distinct mental health profiles within women with PCOS. They found that cognitive reappraisal and social support were positive mental health adjustment predictors, while expression suppression indicated negative barriers. These studies highlight the importance of addressing the emotional and psychological aspects of PCOS as a matter of female health. The

findings suggest that clinicians should be aware of the emotional distress experienced by women with PCOS and provide appropriate support to patients. Furthermore, promoting resilience and emotions.

Although the quantitative results did not support our hypothesis, it is essential to consider the findings from our qualitative research. The qualitative data revealed that women with PCOS do have strategies for emotional regulation, contrary to our initial expectations. This suggests that while the two groups may not have significant differences in emotional regulation, they employ similar strategies to regulate their emotions effectively. The qualitative findings provide valuable insights into how women with PCOS manage their emotions. Several statements from our qualitative research support the existence of emotional regulation strategies in women with PCOS:

"Maintaining a positive mindset has been crucial in taking charge of my PCOD and overall health." Participant 12 expressed, Participant 8 said *"It is also empowering to educate myself about this condition and learn more about managing my symptoms and improving my overall health."* Participant 5 *"I have also found that dancing and playing with my pet can be a great way to manage my emotions related to PCOS."* Participant 13 said

Our major area of interest was exploring women's experiences with PCOS and their well-being in different domains through qualitative study. The participants reported various symptoms, including hirsutism, weight gain, and infertility, often leading to psychological distress. Therefore, the study highlights the need for a comprehensive approach to care that considers both the physical and emotional aspects of PCOS. The study also explored coping strategies, such as medical interventions, adaptive coping, and maladaptive coping mechanisms. Finding suggests that PCOS considerably impacted relationship dynamics. To Lazarus and Folkman's (1984) theory, coping strategies are a

significant intermediary between experiencing a stressful event and the subsequent psychological suffering. Several studies have examined women's coping strategies and mental health with PCOS/PCOD. Butts and Dokras (2017) found that most women in the United States with PCOS utilized adaptive coping mechanisms such as social support, problem-solving, and positive reappraisal. Sharma and Kar (2022) discovered that comorbidities worsened the health-related quality of life (HRQOL) of women affected by PCOS, and using maladaptive coping strategies further deteriorated their psychological well-being. Zhang et al. (2021) confirmed the prevalence of depression and anxiety among women with PCOS. Wu et al. (2020) revealed that women with PCOS had a higher risk of depression, anxiety, diminished sexual satisfaction, and lowered HRQOL. Mirghafourvand et al. (2019) identified various coping strategies employed by women with PCOS, including problem-solving, emotional regulation, social support, religious coping, and avoidance. These studies emphasize the importance of understanding coping strategies and mental health issues in women with PCOS for better management and support.

While some women reported having supportive partners, others experienced negative repercussions, such as increased relationship control. Infertility was also found to have a substantial impact on relationships. Therefore, the study highlights the importance of partners being informed about the emotional and physical implications of PCOS and the need for their support. Numerous investigations have delved into the effects of polycystic ovary syndrome (PCOS) on women's quality of life and sexual satisfaction. Berkseth et al. (2010) discovered that PCOS exerts substantial negative impacts on multiple facets of women's lives, encompassing physical health, psychological well-being, self-esteem, and social functioning. Drosdzol-Cop et al. (2015) underscored the correlation between objective characteristics of PCOS (such as parity and BMI) and concerns related to PCOS (including infertility and acne) with regard to sexual and relational satisfaction among couples where the woman is affected

by PCOS. Another study conducted by Buyukbayrak et al. (2021) unveiled that women diagnosed with PCOS reported significantly lower levels of sexual satisfaction in comparison to those without the syndrome, and the presence of depression further exacerbated this reduced satisfaction. Furthermore, Warchol-Biedermann et al. (2019) conducted a systematic review and meta-analysis, which revealed a high prevalence of sexual dysfunction among women with PCOS. This study emphasized the necessity for healthcare providers to acknowledge and address sexual concerns to enhance the overall well-being of women afflicted by PCOS.

Furthermore, the study revealed that women with PCOS faced social well-being difficulties, such as isolation, unrealistic beauty standards, envy, and stigma, which often resulted in shame and inhibited their ability to seek help. Addressing these issues is crucial to promoting social support, self-acceptance, and mental well-being in women with PCOS. In addition, the healthcare system presented challenges, including delayed diagnosis as a result of an absence of knowledge among healthcare providers or the women's reluctance to seek help. This underscores the need for increased education and awareness about PCOS among healthcare providers and the general public. In their comprehensive review, Hoeger et al. (2020) discuss the current state of knowledge regarding polycystic ovary syndrome (PCOS), specifically addressing the challenges associated with diagnosis, delayed identification, and less-than-optimal treatment practices that impede effective management of the condition. The authors emphasize the significance of increasing awareness, facilitating early diagnosis, and implementing evidence-based treatment approaches to overcome the consequences and difficulties related to PCOS. Similarly, in a distinct study, Sadeghi et al. (2022) present a comprehensive review focusing on the underlying pathophysiology, clinical investigations, and available treatment options for PCOS, with particular attention given to repurposed medications. The article sheds light on the complex mechanisms involved in PCOS and highlights potential therapeutic strategies utilizing

existing medications to improve the management of the condition. The authors suggest that repurposed medications offer promising avenues for more precise and individualized approaches to PCOS treatment. In recent studies, researchers have explored the association between social support and different dimensions of well-being in women with PCOD/PCOS. Ramezani Tehrani et al. (2013) discovered that social support significantly impacts the quality of life of women with PCOS, with higher levels of support correlating with improved overall quality of life. Similarly, Kim and Kim (2010) found that perceived social support plays a crucial role in depression levels among women with PCOS, as greater levels of support were linked to lower levels of depression. Ramezani Tehrani et al. (2014) identified a positive relationship between social support and sexual satisfaction in women with PCOS, where higher levels of support were associated with increased sexual satisfaction. Additionally, Bazarganipour et al. (2017) demonstrated a connection between social support and better health-related quality of life in women with PCOS, as those with stronger support networks reported higher levels of health-related quality of life. Lastly, Kordi-Tamandani et al. (2012) revealed that heightened social support was linked to reduced anxiety levels in women with PCOS, suggesting that social support networks may serve as a protective factor against anxiety symptoms. These findings highlight the significant influence of social support on various aspects of well-being among women with PCOS and emphasize the importance of fostering supportive environments in the management of the condition (Ramezani Tehrani et al., 2013; Kim & Kim, 2010; Ramezani Tehrani et al., 2014; Bazarganipour et al., 2017; Kordi-Tamandani et al., 2012).

In their study, Jones, Griffiths, and Ussher (2016) investigated women's experiences with Polycystic Ovary Syndrome (PCOS) and comorbidities through Skype interviews. The findings underscored the profound impact of PCOS on women's lives, affecting their physical and mental well-being. Participants expressed the difficulties in managing symptoms associated with PCOS, such as hormonal

imbalances, weight gain, and fertility issues, which contributed to frustration, isolation, and a disrupted sense of self. The study by Bhatia (2021) during the COVID-19 pandemic revealed heightened levels of uncertainty, anxiety, and social isolation experienced by women with PCOS. The pandemic exacerbated the existing challenges of PCOS management, including disrupted access to healthcare services, increased stress levels, and limited social support networks. The findings emphasized the necessity for tailored support and treatments to meet the specific demands of women with PCOS during public health crises. Additionally, Duleba (2020) shed light on the overlooked risk faced by women with PCOS during the COVID-19 pandemic, highlighting how PCOS's metabolic and hormonal abnormalities may render them more vulnerable to severe illness if they contract COVID-19. Recognizing PCOS as a relevant risk factor and providing appropriate care and support for this patient population during the pandemic were emphasized. Finally, the comprehensive review by Jahanfar, Haghani, and Ramezani-Tehrani (2018) revealed a high prevalence of mental health challenges, including depression, anxiety, and reduced quality of life, among women with PCOS. The findings underscored the importance of integrated approaches to PCOS management that address both physical and mental health aspects, ensuring holistic care for women with the condition.

Another theme that emerged was related to psychological wellbeing. Women reported experiencing body image issues, mental health problems, impaired normal functioning, emotional impact, sleep disturbances, emotional regulation difficulties, and cognitive impairment. Addressing these issues is essential to improve women's overall quality of life with PCOS. In their study, Boyce et al. (year not provided) provided preliminary support for the association between media body ideal insecurity and body dissatisfaction in women with polycystic ovary syndrome (PCOS). The findings suggested that women with PCOS who experience greater insecurity regarding media body ideals are more likely to experience body dissatisfaction. This highlights the potential influence of societal beauty standards on

body image perceptions among women with PCOS. On the other hand, Mahale et al. (year not provided) examined body image and self-esteem in girls with PCOS in the Indian context. The research revealed that girls with PCOS often face challenges related to body image concerns and lower self-esteem. These findings emphasize the importance of addressing body image issues and promoting positive self-esteem among girls with PCOS to support their psychological well-being. Saha et al. (2019) presented an automated early detection and prediction model for PCOS and associated mental health issues. The study aimed to improve early detection and intervention for women at risk of developing PCOS and mental health problems. Kumari et al. (2020) conducted a prospective case-control study in India to examine the impact of PCOS on health-related quality of life and mental health. The findings highlighted the negative impact of PCOS on women's quality of life, leading to mental distress and psychological challenges. The studies underscore the importance of addressing the mental health needs of women with PCOS and giving inclusive care that addresses both physical and mental health aspects. These results emphasize the significance of addressing sleep disruptions in women diagnosed with PCOS in order to enhance their overall well-being and effectively manage the condition. Barry, Hardiman, and Saxby (2007) conducted a study examining the neuropsychological functioning of right-handed women with and without polycystic ovary syndrome (PCOS). The findings indicate a potential association between PCOS and compromised cognitive abilities in women.

The study also investigated the mind-body connection and found that women reported experiencing psychosomatic factors and remission. It identified practical and psychological coping strategies and support needs, and the participants generally welcomed the idea of group education sessions for women with PCOS. The studies mentioned provide valuable insights into the mind-body connection in polycystic ovary syndrome (PCOS). Zangeneh et al. (2014) found that PCOS patients had lower levels

of melatonin and β -endorphin, and their sleep duration was correlated with adrenaline and noradrenaline levels. Benjamin, Kuppusamy, Koshy, Narayana, and Ramaswamy (2021) conducted a meta-analysis and determined that cortisol levels were seen to be significantly higher in women with PCOS compared to healthy controls. Papalou and Diamanti-Kandarakis (2016) emphasized the role of stress, including metabolic, inflammatory, oxidative, and emotional stress, in the pathophysiology of PCOS. Lastly, Sahingöz, Uguz, Gezginc, and Gök Korucu (2013) found that women with PCOS had a higher prevalence of psychiatric disorders, particularly social phobia and avoidant personality disorder. These findings highlight the complex interplay between hormones, sleep, stress, and mental health in PCOS, suggesting the importance of addressing these factors in managing and treating the condition.

CHAPTER-7

CONCLUSIO

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The mixed-method research concludes that women with PCOS face significant challenges in their well-being across diverse domains. According to the quantitative study, women experiencing PCOS exhibited considerably more symptoms of depression, anxiety, and stress than those without PCOS. The mean score for stress was significantly higher in the PCOS group, as was the mean score for anxiety and depression. Additionally, the participants with PCOS had a significantly lower mean score for quality of life compared to the non-PCOS group. The results presented imply having PCOS can have a considerable detrimental effect on a woman's mental well-being. However, both facets of the Emotional Regulation Scale (Cognitive Reappraisal and Expressive Suppression) showed no significant differences between the groups. Specifically, the t-test results showed that for Cognitive

Reappraisal, the mean score was not significantly different between the PCOS and non-PCOS groups. Similarly, for Expressive Suppression, the mean score was not significantly different between the PCOS and non-PCOS groups. The qualitative study delves into women's experiences living with PCOS, shedding light on the intricacies of their well-being across diverse domains. The outcomes bring to the forefront the substantial impact of PCOS on the dynamics of relationships and the profound social well-being hurdles these women face, encompassing societal pressures, stigma, and the dire need for social support that fosters self-acceptance and enhances mental well-being. The research also directs attention to the limitations within the healthcare system, specifically concerning delayed diagnoses attributed to inadequate awareness among healthcare providers and even the affected women themselves. This glaring concern emphasizes the urgent requirement for enhanced knowledge dissemination and increased awareness among professionals and the general public.

Limitations

1. By primarily recruiting participants from urban settings, the study overlooked the unique challenges women with PCOS face in rural or remote areas, where access to healthcare and resources may be limited, and socio-cultural contexts differ from urban areas.
2. The study solely focused on women with PCOS, neglecting the perspectives and experiences of men who may be indirectly affected by the condition, thereby limiting a comprehensive understanding of the challenges faced by couples or families affected by PCOS.
3. The recruitment method used in this study, which primarily relied on gynecologists and online PCOS support groups, could have introduced a bias by disproportionately including women with more severe PCOS symptoms. Consequently, the research findings may be skewed towards a greater emphasis on the challenges experienced by individuals with severe symptoms, potentially overlooking the experiences of women with milder symptoms.

4. The study did not consider the occupational setting of the participants, overlooking the potential impacts of work environment, job demands, and workplace support on the well-being outcomes observed, which could be significant factors influencing the experiences of working women with PCOS.
5. The study's exclusive focus on women with PCOS omitted the perspectives and experiences of male partners, which could have provided valuable insights into the relational dynamics, support systems, and coping strategies employed by couples navigating the challenges posed by PCOS, limiting the overall understanding of the holistic impact of the condition.
6. The study did not consider the influence of other co-existing health conditions on the observed outcomes, limiting the ability to attribute the results to PCOS solely and neglecting the potential impact of other diseases on participants' well-being.

Future implications

Understanding the challenges of women with PCOS is vital for researchers. They want to explore specific factors and how PCOS affects their well-being. Long-term studies can provide insights into the lasting effects of PCOS. Researchers can identify critical periods and develop interventions to improve long-term outcomes.

Future research can focus on interventions to enhance mental well-being. This may include therapies and lifestyle changes to reduce stress and improve quality of life. Randomized controlled trials can establish evidence-based interventions.

Women with PCOS face challenges related to social well-being and relationships. Studies should consider socioeconomic factors for a better understanding.

Using mixed-methods research designs can help understand PCOS challenges. Researchers should continue exploring the interplay between biological, psychological, and social factors.

It's important to apply research findings practically. Creating educational programs and raising awareness can improve outcomes. Implementation should be evaluated for feasibility and effectiveness in real-world settings.

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Appendix A

Informed Consent Form:

You are invited to participate in a study conducted by Tanvi Bhardwaj on the psychological well-being of women with Polycystic Ovary Syndrome (PCOS). The purpose of this study is to understand the mental health challenges faced by women with PCOS and explore strategies to improve their well-being. Participation involves completing an online survey and potentially being selected for an interview to discuss your experiences with PCOS. Your identity will be kept confidential, and participation is voluntary with the option to withdraw at any time. If you have any questions or concerns, please contact at tbhardwaj_ma21@thapar.edu. Your consent to participate indicates your understanding and agreement to the terms of this study

Appendix B

EMOTION REGULATION QUESTIONNAIRE (ERQ)

Statement	1	2	3	4	5	6	7
1. When I want to feel more positive emotion...		Strongly				Neutral	Strongly
2. I keep my emotions to myself.		Strongly				Neutral	Strongly
3. When I want to feel less negative emotion...		Strongly				Neutral	Strongly
4. When I am feeling positive emotions...		Strongly				Neutral	Strongly
5. When I'm faced with a stressful situation...		Strongly				Neutral	Strongly
6. I control my emotions by not expressing them.		Strongly				Neutral	Strongly
7. When I want to feel more positive emotion...		Strongly				Neutral	Strongly
8. I control my emotions by changing the way I think...		Strongly				Neutral	Strongly
9. When I am feeling negative emotions...		Strongly				Neutral	Strongly
10. When I want to feel less negative emotion...		Strongly				Neutral	Strongly

Appendix C

DASS-21

Statement	0 (Did not apply to me at all)	1 (Applied to me to some degree, or some of the time)	2 (Applied to me to a considerable degree, or a good part of the time)	3 (Applied to me very much, or most of the time)
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1. I found it hard to wind down.

2. I was aware of dryness of my mouth.

3. I couldn't seem to experience any positive feeling.

4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).

5. I found it difficult to work up the initiative to do things.

6. I tended to over-react to situations.

7. I experienced trembling (e.g., in the hands).

8. I felt that I was using a lot of nervous energy.

9. I was worried about situations in which I might panic and make a fool of myself.

10. I felt that I had nothing to look forward to.

11. I found myself getting agitated.
 12. I found it difficult to relax.
 13. I felt down-hearted and blue.
 14. I was intolerant of anything that kept me from getting on with what I was doing.
 15. I felt I was close to panic.
 16. I was unable to become enthusiastic about anything.
 17. I felt I wasn't worth much as a person.
 18. I felt that I was rather touchy.
 19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).
 20. I felt scared without any good reason.
 21. I felt that life was meaningless.
-

Appendix D

Quality of Life Scale (QOLS-16)

Domain	Mostly Delighted	Pleased	Satisfied	Mixed	Dissatisfied	Unhappy	Terrible
1. Material comforts							
2. Health							
3. Relationships with family							
4. Having and rearing children							
5. Close relationships							
6. Close friends							
7. Helping and encouraging others							
8. Participating in organizations							
9. Learning							
10. Understanding yourself							
11. Work							
12. Expressing yourself creatively							
13. Socializing							
14. Reading, listening to music							
15. Participating in active recreation							
16. Independence							

Appendix-E

QUALITATIVE RESEARCH QUESTIONS

or overall well-being?