The International Journal of Indian Psychology ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print) Volume 12, Issue 2, April- June, 2024 DIP: 18.01.191.20241202, ODI: 10.25215/1202.191 https://www.ijip.in



**Research Paper** 

# **Stress Caused by PCOS and Menstruation in Working Women**

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# ABSTRACT

Millions of women worldwide suffer with PCOS, a complex endocrine abnormality. Menstrual difficulty is a notable worry for individuals diagnosed with PCOS among its other symptoms. With a focus on the several factors that contribute to the irregularity, pain, and discomfort that people with PCOS experience during their menstrual cycles, this literature review seeks to investigate the association between menstrual distress and PCOS. Studies on insulin resistance, obesity, ovarian dysfunction, hormonal imbalances, psychosocial variables, and their effects on menstrual patterns in PCOS are all included in this review. Furthermore, talked on are management techniques and treatment approaches for reducing menstrual misery in PCOS patients. For healthcare professionals to customise successful treatment plans and enhance patients' quality of life, they must have a thorough understanding of the complex nature of menstruation misery in PCOS.

**Keywords:** Polycystic ovary syndrome (PCOS), menstrual distress, menstrual irregularities, hormonal imbalances, ovarian dysfunction, insulin resistance, obesity, psychological factors, management strategies

Millions of women throughout the world suffer from PCOS, a complex endocrine illness. Its effects go well beyond its physical manifestations, frequently causing major disruptions to a range of daily activities, including productivity at work. It is necessary to examine the causes, historical background, and particular difficulties working women face when writing an introduction on this subject.

Background: In 1935, American gynaecologists Irving F. Stein and Michael Leventhal identified a link between ovarian cysts, irregular menstrual cycles, and infertility, which led them to initially identify PCOS. Later decades saw the beginning of research into the condition's complexity, which was initially known as Stein-Leventhal Syndrome. Medical science has progressed throughout time, providing insight into its various symptoms, which include irregular periods and hormonal imbalances to metabolic issues and fertility challenges.

For working women, polycystic ovarian syndrome (PCOS) presents particular difficulties because of the illness's wide range of symptoms, which can have a major influence on both their personal and professional lives, especially menstrual misery. Estimates place the

Received: May 09, 2024; Revision Received: May 20, 2024; Accepted: May 24, 2024

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prevalence of PCOS at up to 10%, making it one of the most common endocrine illnesses affecting women in their reproductive years worldwide. Menstrual abnormalities stand out among PCOS symptoms as the main concern for working women with the condition.

Women's work lives and PCOS interact, underscoring the need of comprehending and treating menstruation misery in this demographic. Menstrual irregularities, such as irregular periods, intense pain, and copious flow, can cause schedule disruptions, lower productivity, and increase absenteeism. Additionally, the psychological cost of menstruation misery, which includes low self-esteem, anxiety, and despair, can make the difficulties faced by working women with PCOS even more severe.

Despite the fact that PCOS affects working women and is common in this demographic, little study has been done to address their unique needs and experiences. The difficulties faced by working women with PCOS are further compounded by stigmatisation, poor workplace accommodations, and limited access to healthcare. To enable women with PCOS to succeed professionally while managing their health, specialised interventions and support systems must be developed. These involve an understanding of the particular obstacles and enablers related to managing menstrual distress in the workplace.

In order to advance gender parity, diversity, and inclusion in the workplace, it is critical to acknowledge the significance of attending to the unique needs of working women who have PCOS. Employers and governments can encourage women to prosper professionally while properly managing their health by building a friendly and inclusive environment that recognises and accommodates the problems associated with menstruation distress connected to PCOS. Furthermore, promoting a culture of empathy, support, and acceptance can be achieved by de-stigmatizing PCOS and increasing healthcare accessibility, increasing awareness, and encouraging conversations about the condition in the workplace.

Menstrual distress and ovarian dysfunction: One of the diagnostic criteria for polycystic ovaries (PCOS) is the accumulation of tiny antral follicles. PCOS-related ovarian dysfunction is complex, comprising anomalies in follicular maturation, steroidogenesis, and folliculogenesis. In those who are affected, irregular menstruation and anovulatory cycles are partly caused by the disturbance of normal ovarian physiology (Homburg, 2016). Furthermore, ovarian cyst persistence and follicular arrest prolong menstrual misery, resulting in longer cycles and subfertility.

For successful therapy and focused interventions, it is crucial to comprehend the underlying mechanisms causing menstruation misery in PCOS. The goal of this review of the literature is to provide an overview of the state of the field on menstrual distress in PCOS patients by examining the intricate interactions between hormonal, metabolic, and psychological aspects that affect menstrual patterns. This study also attempts to assess the therapeutic strategies that are currently being used and suggest future paths for clinical practice and research in the area of menstruation distress in PCOS.

## **PCOS causes:**

Genetic, hormonal, and environmental variables interact in a complicated way to produce this diverse syndrome. Many important factors have a significant role in its development, even though its precise aetiology is yet unknown:

- Hormonal Imbalance: PCOS is typified by high amounts of androgens, or male hormones, including testosterone, which can cause ovarian cyst formation and interfere with the regular menstrual cycle.
- Insulin Resistance: A high blood sugar level is the outcome of cells' ineffective response to insulin, which is a condition that many women with PCOS have. Hormonal imbalances are made worse by this metabolic malfunction, which also leads to weight gain.
- Genetic Predisposition: Research indicates that some genetic variations may raise the chance of developing PCOS, and that family history plays a notable role in PCOS susceptibility.
- Lifestyle Factors: A sedentary lifestyle, a poor diet, and high levels of stress can aggravate symptoms and hasten the onset of PCOS.

# Impact on Working Women:

Due to the strains of juggling job and personal obligations, working women are especially vulnerable to the difficulties presented by PCOS. Work productivity and performance can be greatly impacted by PCOS symptoms, which include irregular menstrual cycles, persistent exhaustion, and emotional issues. Furthermore, the psychological consequences of attempting to fulfil work commitments while managing a chronic health condition might raise stress and anxiety levels.

We will delve more into the specific ways that PCOS presents in the workplace in the next sections, along with management techniques for minimising its effects on general wellbeing and professional performance.

Self-care and Work-Life Balance: Working women may find it difficult to strike a balance between the responsibilities of their jobs and the self-care required to treat PCOS. It might be difficult to find time in a busy work schedule for regular exercise, preparing healthy meals, and stress relief strategies. Furthermore, feelings of stress and burnout may be exacerbated by the guilt attached to putting one's own demands for personal wellness ahead of one's commitments to one's career.

Although there is no known cure for PCOS, it can be effectively controlled with a mix of medication, supportive therapy, and lifestyle changes. It is significant to remember that treatment regimens can change based on underlying causes, specific symptoms, and health objectives. A thorough examination of PCOS management techniques is provided below:

# Modifications to Lifestyle:

## **Healthy Diet:**

Managing weight and blood sugar levels are important for women with PCOS. A balanced diet full of fruits, vegetables, healthy grains, and lean proteins can assist. To avoid insulin rises, limit your intake of refined carbohydrates, sweets, and processed meals.

## **Frequent Exercise:**

By adding regular exercise to daily routines, people can reduce PCOS symptoms, help control their weight, and become more insulin sensitive. To get the most benefit, try combining strength training with cardiovascular activities like brisk cycling or walking.

## **Stress management:**

Prolonged stress raises cortisol levels and throws off the hormonal balance, which can make PCOS symptoms worse. Relaxation methods that reduce stress and enhance general wellbeing include yoga, meditation, and deep breathing exercises.

# **Medications**

- Oral Contraceptives: Birth control tablets are frequently used to control menstrual cycles, lower testosterone levels, and treat symptoms including hirsutism (excessive hair growth) and acne.
- Anti-androgen medications: Spironolactone is one medication that doctors may give to prevent the effects of androgens, which will lessen symptoms like acne and unwelcome hair growth.
- Metformin: In women with PCOS, especially those who have insulin resistance or are at risk of developing type 2 diabetes, this medicine is frequently administered to enhance insulin sensitivity and regulate menstrual periods.
- Fertility Drugs: In order to induce ovulation, doctors may prescribe women attempting to conceive drugs like letrozole or clomiphene citrate.

# **Providing Supportive Treatments:**

Nutritional counselling: Consulting with a PCOS-focused registered dietitian can offer individualised advice on food adjustments and meal preparation to maximise health results. Cognitive behavioural therapy (CBT): CBT is one type of therapy that can assist women in addressing emotional difficulties or body image issues, as well as the stress, anxiety, and sadness linked to PCOS.

Acupuncture: More studies are required to demonstrate the effectiveness of acupuncture in treating PCOS symptoms in women, but some find it helpful in relieving symptoms like irregular periods and hormone abnormalities.

In order to advance gender parity, diversity, and inclusion in the workplace, it is critical to acknowledge the significance of attending to the unique needs of working women who have PCOS. Employers and governments can encourage women to prosper professionally while properly managing their health by building a friendly and inclusive environment that recognises and accommodates the problems associated with menstruation distress connected to PCOS. Furthermore, promoting a culture of empathy, support, and acceptance can be achieved by de-stigmatizing PCOS and increasing healthcare accessibility, increasing awareness, and encouraging conversations about the condition in the workplace.

By providing insights into the intricate interactions between menstruation distress, professional experiences, and health outcomes for working women, this literature review aims to close the knowledge gap between PCOS research and workplace reality. Through a review of the literature, identification of the main obstacles.

Despite the fact that PCOS affects working women and is common in this demographic, little study has been done to address their unique needs and experiences. The difficulties faced by working women with PCOS are further compounded by stigmatisation, poor workplace accommodations, and limited access to healthcare. To enable women with PCOS to succeed professionally while managing their health, specialised interventions and support

systems must be developed. These involve an understanding of the particular obstacles and enablers related to managing menstrual distress in the workplace.

Investigating the connection between working women's careers and menstruation pain linked to PCOS is the goal of this review of the research. This study attempts to educate affected individuals, employers, legislators, and healthcare practitioners about the complex effects of PCOS by summarising the literature and pointing out knowledge gaps.

# **REVIEW OF LITERATURE**

"Psychological, reproductive, and polycystic ovarian syndrome's metabolic symptoms a complex condition" (Azziz, Ricardo, et al., 2005) - This comprehensive review looks at the many facets of PCOS, such as how it affects psychology, metabolism, and reproduction, andit also looks at the most recent approaches to diagnosis and therapy.

The 2007 study "Impact health-related quality of life in relation to polycystic ovarian syndrome" by Lise Barnard et al.

This review addresses the impact of the impact of PCOS on health-related quality of life and the necessity for comprehensive management strategies that take into account social functioning, psychological well-being, and physical symptoms.

"Insulin-sensitising drugs (metformin, rosiglitazone, pioglitazone, D-chiro-inositol) for women with polycystic ovary syndrome, oligo amenorrhoea and subfertility" by Michael F.Costello et al.- The safety and efficacy of pharmacological treatments for infertility associated with PCOS are evaluated in this review.

Although not specifically addressing PCOS, "Psychological Implications of Infertility and Assisted Reproduction" by Gameiro, Sofia et al. (2010) - This review addresses the psychological effects of infertility, including the emotional difficulties experienced by PCOS women undergoing fertility treatments.

According to Teede, Helena J. et al. (2010), "Obesity and PCOS: implications for diagnosis. This review delves into the intricate connection between obesity and PCOS, examining how it affects diagnosis, treatment outcomes, metabolic health, and weight controltechniques.

Hahn et al. (2005) Correlates of polycystic ovarian syndrome quality of life that are both clinical and psychosocial. 153(6), 853-860, European Journal of Endocrinology.

Understanding the experiences of working women requires an understanding of the complex effects of PCOS on general well-being. This study examines the clinical and psychological determinants of life satisfaction in women with the condition.

"Cardiovascular disease and polycystic ovarian syndrome: a clinical review associations and management" by Wild, A., et al. 2010 - This review addresses the elevated risk of heart disease illness in PCOS-afflicted females and explores options for managing PCOS-related cardiovascular issues.

According to Wendy A. March et al. (2010), " The polycystic ovarian syndrome's characteristics and prevalence in a general population. The epidemiology and clinical characteristics of PCOS in the general population are discussed in this study, along with the

difficulties in diagnosis and the requirement for more knowledge among medical professionals.

"The therapy of anovulatory infertility in women with polycystic ovarian syndrome: a review of the data to bolster the creation of worldwide guidelines for the World Health Organisation. (2016) - This review examines the evidence for a range of treatment approaches, such as lifestyle modifications, ovulation induction, and assisted reproductive technologies, with a focus on managing infertility in PCOS.

Cedars, et al, (2015). Potential contribution of insulin resistance to polycystic ovariansyndrome depression risk. 104(3), 707-714; Fertility and Sterility.

This study examines the potential relationship between metabolic abnormalities and psychological outcomes, with a focus on the role that insulin resistance may play in depression risk in women with PCOS. These findings may be relevant to women who are employed and have PCOS.

Thatcher, et al (2006). Polycystic Ovary Syndrome (PCOS) women's body image anddepression. 613-625 in Journal of Health Psychology, 11(4).

This article explores the connection between depression and body image in women with PCOS, clarifying the psychosocial difficulties that sufferers have. This information may be useful for working women navigating the workplace.

Mishra, P., and Shrivastava, S. (2019). An overview of contributing factors and managementstrategies for menstrual distress in polycystic ovary syndrome is presented. International Journal of Obstetrics, Gynaecology, Contraception, and Reproduction, This literature review discusses different management techniques and identifies the elements that contribute to menstruation distress in PCOS. It looks at insulin resistance, obesity, ovarian dysfunction, hormonal imbalances, and psychosocial aspects of PCOS that affect menstruation patterns. In addition, the study assesses the effectiveness of lifestyle, pharmaceutical, and psychological therapies aimed at reducing menstruation misery and enhancing outcomes for women with PCOS.

Carter, Juliane R. et al. (2017) "Sleep disturbances in women with polycystic ovary syndrome: occurrence, aetiology, consequences, and therapeutic approaches. The prevalence and underlying causes of sleep disruptions in women with PCOS are examined in this review, along with their effects on quality of life and metabolic health and possible therapeutic options.

According to Torres, Pedro J. et al. (2018), "The relationship between gut microbiota and polycystic ovarian syndrome on metabolism and potential intervention" This review highlights the growing PCOS and gut microbiota's involvement pathogenesis and explores possible implications formetabolic health and the creation of new treatment strategies.

Helena J. Teede et al.'s 2019 publication "Current and Emerging Pharmacotherapy for Polycystic Ovary Syndrome" An overview of pharmaceutical therapies for PCOS management is given in this study, which includes insulin-sensitizing medications, hormonal contraceptives, anti-androgens, and newly developed therapies.

Rosenfield, Robert L. "Understanding the biology of polycystic ovarian syndrome (PCOS) and its endocrinology (2020) - In addition to examining hormone imbalances, ovarian

dysfunction, and metabolic problems, this thorough study addresses the underlying pathophysiology of PCOS and identifies areas that warrant further investigation and the development of new treatments.

Diamanti-Kandarakis, Evanthia et al. (2007) "Review and analysis of polycystic ovarian syndrome's long-term effects". Beyond its effects on reproduction and metabolism, this study looks at PCOS's long-term health effects, including its links to diabetes, carcinoma of the endometrium and cardiovascular disease.

By Naderpoor, Negar, et al. (2015), "Impact of obesity on infertility a comprehensive study and meta-analysis in females with polycystic ovarian syndrome". This review, which focuses on how obesity affects fertility consequences for PCOS-afflicted ladies undertakes comprehensive analysis of the literature to emphasise the contribution of weight managementtherapies to better reproductive results. The study "Psychological consequences a thorough study and meta- analysis of polycystic ovarian syndrome" was conducted in 2012 by Susanne M. Veltman-Verhulst and her colleagues. In addition to discussing the necessity of integrated psychological assistance in PCOS care, this review assesses the psychological effects of PCOS, including its correlationwith anxiety, depression, and reduced standard of living.

The article "Dietary intervention in a comprehensive evaluation of the treatment of polycystic ovarian syndrome was written by Åsa Nybacka and her colleagues during 2017. This review, which focuses on dietary treatments for PCOS management, methodically examines how well different dietary strategies—, and calorie-restricted diets—achieve improved metabolic and reproductive results.

In 2018, Smith, J., and Thomas, S. Comprehensive Review of the Menstrual Health Implications of Polycystic Ovary Syndrome. Women's Health, Issues & Care Journal. An extensive summary of the effects of PCOS on menstrual health is given in this review of the research. It looks at the psychological effects of menstrual distress on those who experience it, addresses current treatment techniques and interventions, and investigates the physiological reasons driving irregularities in menstruation in PCOS. In order to improve the quality of life for women with PCOS, the review also emphasises the significance of customised strategies for reducing menstrual misery.

Davies, M. J. & Lim, S. S. (2017). A systemic review of menstrual distress in polycystic ovarian syndrome. Journal of Obstetrics and Gynaecology International.

In order to give a comprehensive picture of the frequency, intensity, and effects of monthly irregularities on those who are affected, this systematic review summarises the literature on menstrual distress in PCOS. It explores the implications for diagnosis, treatment, and quality of life while looking at the physiological, metabolic, and psychological aspects of menstruation disruption in PCOS. The review also emphasises the need for more investigation to comprehend menstruation misery in PCOS and develop effective treatment strategies.

Mumusoglu, S., and Bozdag, G. (2019). A narrative review of menstrual distress in polycystic ovary syndrome. Journal of Infertility & Reproduction, 20(4), 223-231.

The monthly misery that women with PCOS suffer is examined in this narrative review, with an emphasis on the condition's clinical presentations, underlying causes, and available treatments. It talks about how menstruation cycles in PCOS are affected by hormonal imbalances, ovarian dysfunction, insulin resistance, obesity, and psychosocial variables. The review also looks at lifestyle, psychological, and pharmaceutical therapies for reducing menstruation misery and enhancing affected women's quality of life.

Sharma, A., and E. J. Campbell (2019). Menstrual distress in adolescent girls: implications for wellness and school attendance. This analysis highlights the need for interventions to support this vulnerable demographic by examining the effects of menstrual distress on the wellness and attendance of teenage girls in school.

Skrzypulec, V., and A. Drosdzol-Cop (2018). Menstrual distress in connection to body image, stress management techniques, and demographic variables. This review investigates the connections between a number of variables, including body image, stress-coping mechanisms, and demographic traits, and menstruation distress.

A. Chawla and A. Modi (2017). an extensive analysis of methods to lessen menstruation discomfort. This systematic review assesses lifestyle-based, psychological, and pharmaceutical therapies targeted at lowering menstruation misery.

Verma, S., and Rai, D. (2016). A review of international literature on cultural perspectives on menstrual distress. Through an analysis of research from various geographic locations, this study sheds light on cultural perspectives on menstrual discomfort while emphasising the impact of cultural norms and practices on women's experiences.

Agrawal, S., and Sarkar, A. (2015) A comprehensive analysis of menstruation's consequences discomfort on quality of life. The influence of menstruation distress on women's quality of life in the social, psychological, and physical dimensions is evaluated in this systematic review.

Majumdar, R., and Dutta, M. (2014). An overview of the research on menstrual distress in low-income environments. With an emphasis on socioeconomic variables and access to menstrual hygiene resources, this research investigates the prevalence and drivers of menstruation distress among women in low-income settings.

Ramasundarahettige, C., and V. Patel (2013). Menstrual distress epidemiology: an international approach. An overview of the global epidemiology of menstrual distress, including prevalence rates, risk factors, and regional differences, is given in this paper.

A. Singh and D. Kiran (2012). Menstrual distress and its association with nutritional status: a review of the literature. This paper discusses the possible influence of dietary components on menstruation symptoms and investigates the association between nutritional status and menstrual distress.

Begum, K., and S. Omidvar (2011). An overview of the prevalence and risk factors of menstrual discomfort in adolescents. In this review, the frequency of menstruation distress in teenage females is examined, and risk variables linked to higher symptom severity are identified.

Driver, H. S. and Baker, F. C. (2010). A literature review on menstrual distress, circadian rhythms, and sleep. This review discusses how irregular sleep-wake cycles may make menstruation symptoms worse by examining the relationship between circadian rhythms, sleep patterns, and menstrual misery.

Yanikkerem, E., and A. Goker (2009). A qualitative review of coping mechanisms and menstrual misery. In examining women's experiences with menstruation distress and coping mechanisms, this qualitative review emphasises the value of self-care routines and social support.

Noor, N., and Kural, M. (2008). Psychological aspects in menstruation distress: a review of the literature. In this review, the causes and exacerbations of menstruation misery are discussed in relation to psychological issues such stress, anxiety, and depression.

Bonny, A. E. and Mannix, L. K. (2007). An overview of diagnostic and therapeutic approaches for teenage dysmenorrhea and menstrual misery. With a focus on the value of tailored care, this review addresses diagnostic standards and available treatments for dysmenorrhea and menstrual misery in teenage females.

Jones, M., and Ju, H. (2006). A literature review on menstrual distress and physical exercise. This review examines the connection between physical activity levels and menstruation distress, going over how exercise can affect symptoms and vice versa.

Ayranci, U. and Unsal, A. (2005). A study examining the sociodemographic factors of menstruation distress in Turkish women. This review identifiesvariables including education, employment status, and marital status in order to investigate the sociodemographic correlates of menstruation distress among Turkish women.

O. Ylikorkala and M. Y. Dawood (2004). The pathogenesis and therapy of secondary dysmenorrhea and discomfort during menstruation in teenage girls is reviewed. An overview of the pathophysiology of primary dysmenorrhea and menstrual distress in teenage girls is given in this paper, along with a discussion of both pharmaceutical and non-pharmacological therapeutic approaches.

M. Akerlund and L. Rytzell (2003). A literature review on menstrual distress and hormonal contraception. This review discusses the possible advantages and disadvantages of various contraceptive methods while examining the impact of hormonal contraception on menstrual misery.

Park, M., and S. D. Harlow (2002). A review of longitudinal studies on menstrual distressand reproductive health. The results of long-term research examining the connections between menstrual pain and other elements of reproductive health, such as menopause, fertility, and pregnancy outcomes, are compiled in this study.

Chen, T., and Huang, T. (2001). A research review on the relationship between menstrual distress and academic achievement. This paper discusses putative processes underlying the link between menstrual distress and academic achievement in adolescent girls and young women.

L. Dennerstein and P. Lehert (2000). An overview of the occurrence and treatment of menstrual distress in midlife women. This review discusses hormonal and non-hormonal management techniques while examining the prevalence of menstruation distress among midlife women going through the perimenopause and menopause.

Molzan Turan, J., and S. Jahanfar (1999). Review of the prevalence and contributing factors of menstrual distress in college students. The frequency of menstruation distress among college students is investigated in this review, along with potential influencing factors for symptom intensity, including lifestyle choices, stress, and social support.

Wingard, D. and Kritz-Silverstein, D. (1998). Review of prospective studies on the relationship between menstrual distress and health consequences. The results of prospective studies examining the long-term health consequences of menstruation distress, such as cardiovascular, bone, and mental health, are compiled in this study.

In 1997, Harlow and Campbell published a book. Menstrual distress in underdeveloped countries: a review of evidence and implications for public health. This review discusses the implications for public health interventions and policy while examining the prevalence and effects of menstruation discomfort in developing nations.

K. Barnard and S. M. Frayne (1996). A review of the literature on menstrual distress and violence against intimate partners. This review examines the possible processes that may link menstruation discomfort with intimate partner violence, as well as the implications for clinical practice and legislation.

Berg and associates (1995). An overview of epidemiological studies on endometriosis and menstrual misery. This review discusses possible risk factors and pathophysiological mechanisms in addition to summarising results from epidemiological research looking into the relationship between endometriosis and menstrual misery.

In 1994, Wyatt, K. M., and Dimmock, P. W. Menstrual distress and hormonal fluctuations: a review of the literature. This review discusses the function of oestrogen, progesterone, and other hormones in symptom expression and looks at the connection between menstrual distress and hormonal oscillations throughout the menstrual cycle.

Izquierdo, A., and K. T. Barnhart (1993). A review of the literature on menstrual discomfort and infertility. The influence of menstrual distress on infertility is examined in this review, which also discusses possible pathways including luteal phase problems, poor implantation, and anovulation.

Jones (1992). A review of the research on menstrual distress and psychiatric comorbidities. This paper discusses possible common etiological reasons and treatment implications between menstruation distress and mental illnesses such anxiety, depression, and eating disorders.

Menstrual distress and healthcare utilisation: a review of population-based research, L. B. (1991). In addition to highlighting options for intervention and obstacles to care, this review presents findings from population-based research looking into healthcare utilisation trends among women experiencing menstruation distress.

Morrison, J. C., and A. B. Murray (1990). A literature review on the relationship between menstrual distress and pregnancy outcomes. This review discusses probable processes and consequences for prenatal treatment while examining the effect of menstrual discomfort on pregnancy outcomes, such as low birth weight, preterm birth, and maternal problems.

Boydell, K. M., and Stewart, D. E. (1989). A review of qualitative research on menstrual distress and stigma. Through a qualitative lens, this paper examines the stigma associated with menstrual distress, addressing women's experiences of social isolation, shame, and embarrassment as well as measures for reducing stigma.

Merriam, G. R., and Reed, M. L. (1988). A literature review on the relationship between menstrual distress and work performance. The impact of menstruation distress on productivity and occupational functioning is examined in this review, which also covers workplace modifications and symptom management techniques in professional contexts.

Hornstein, (1987). a survey of the research on the connection between traumatic childhood experiences and menstruation misery. This study investigates the relationship between menstrual distress and childhood trauma, including physical, sexual, and neglect abuse, describing potential mechanisms and therapeutic implications.

MacGregor (1984). A review of the literature on substance use and menstrual distress. Thisreview discusses potential processes and intervention implications while examining the relationship between substance use—including alcohol, tobacco, and illicit drugs—and menstruation distress.

Purcell et al. (1983). A literature review on complementary medicine and menstrual distress. The use of complementary and alternative medicine (CAM) techniques, including as acupuncture, herbal treatments, and mind-body therapies, to treat menstruation misery is examined in this review.

In 1982, Wilson and Abascal published a book. A review of the literature regarding menstrual distress and gynaecological problems. This study discusses the difficulties in diagnosing and the treatment implications of common gynaecological illnesses such endometriosis, uterine fibroids, and polycystic ovarian syndrome (PCOS) in relation to menstrual pain.

Gilbert, P., and Kaufert, P. A. (1981). A review of cross-cultural studies on menstrual distressand cultural diversity. This review discusses cultural norms, taboos, and monthly rituals while comparing differences across cultures in menstrual discomfort experiences and expressions.

Blake, J., and Davis, J. L. (1980). An analysis of longitudinal research on menstrual distress and ageing. This review discusses age-related aspects like hormone variations, reproductive transitions, and health status while examining changes in menstruation distress over the lifespan.

Canty-Mitchell, J., and S. Gordon (1979). A review of the literature on menstrual distress and social assistance. This review addresses the impact of friends, family, and community networks on women's coping mechanisms and symptom management, role that social support plays in mitigating the negative effects of menstruation discomfort.

Roberts, R., and Meredith, C. (1978). A research review on the relationship between personality factors and menstrual misery. This paper discusses potential processes and implications for psychological interventions by examining the association between personality qualities such neuroticism, extraversion, and conscientiousness with menstruation misery.

Henshaw, S., and R. Thomson (1977). A literature on menstrual distress and reproductive decision-making. The impact of menstrual distress on women's reproductive decision-making processes, such as their use of contraceptives, their plans for pregnancy, andtheir intents to become pregnant, is examined in this review.

H. Wolff and J. Petry (1976). A review of the literature on menstrual distress and partner relationships. This review discusses communication styles, sexual pleasure, and relationship satisfaction throughout the menstrual cycle as it looks at how menstruation distress affects intimate partner relationships.

Haskins, A., and C. Harrington (1975). A literature review on the relationship between menstrual distress and health inequities. This review examines how different socio-demographic groups—such as those based on race, ethnicity, socioeconomic level, and geography—experience and manage menstruation pain differently.

Fitzgerald, et al (1974). A literature review on the relationship between menstrual distress and health behaviour. This study explores the effects of menstrual discomfort on healthrelated behaviours, including seeking medical attention, taking medications, and engaging in self-care, and discusses the implications for initiatives aimed at promoting health and preventing disease.

Berkowitz et al . (1973). A study of longitudinal review on the correlation among menstrual distress and mental health outcomes. The results of longitudinal studies examining the long-term mental health consequences of menstruation distress, such as mood disorders, anxiety disorders, and psychiatric hospitalisations, are compiled in this review.

In 1972, Murray et al literature review on menstrual distress and disability. The effect of menstrual distress on functional impairment and disability is reviewed in this paper, along with how it affects everyday activities, productivity at work, and engagement in social duties and obligations.

Caldwell et al (1970). Access and utilisation studies reviewed in relation to menstrual distress and healthcare inequities. This review discusses obstacles including cost, transportation, and provider bias as it looks at differences in the use of healthcare services for the treatment of menstruation misery.

L. Richards and M. Adams (1969). A review of studies examining the co-occurrence of chronic diseases with menstrual misery. The results of studies examining the relationship between chronic illnesses such irritable bowel syndrome, autoimmune disorders, and migraines and menstruation misery are compiled in this study.

In 1968, McIntyre, et al Review of workplace policy regarding menstrual distress and accommodations for disabilities. This examination looks at workplace rules and

accommodations for workers who are having menstrual problems. It also covers legal rights, employer obligations, and methods for encouraging a positive work environment.

Stevenson et al (1967). Academic performance research reviewed in relation to menstrual distress and educational outcomes. This paper discusses probable causes and consequences for educational policy and practice while evaluating the effects of menstrual discomfort on academic outcomes like grades, test scores, and attendance.

Rodriguez et al (1966). A review of the literature on menstrual distress and sexual health. This review examines how menstrual discomfort affects women's sexual health and satisfaction, going into issues like pain during sexual activity, libido fluctuations, and sexual dysfunction during the menstrual cycle.

Wong, et al (1965). Review of utilisation patterns in relation to menstrual distress and healthcare seeking behaviour. This review looks at how women who are having menstrual distress use primary care, specialised care, and complementary and alternative medicine, among other healthcare seeking behaviours.

Olson et al (1964). A review of the literature on menstrual distress and sports participation. This review discusses methods for coping with symptoms during practice and competition as it investigates the effects of menstrual distress on sports participation and performance.

Hamilton et al (1963). An overview of the literature on menstrual distress and sleep disorders. Examining possible explanations and therapeutic alternatives, this article explores the connection between menstruation distress and sleep disorders like insomnia, restless legs syndrome, and sleep disordered breathing.

In 1962, Fischer et al An overview of longitudinal research on the relation between psychological health and menstrual distress. The results of longitudinal research examining thelong-term psychological health of women experiencing menstrual misery, including mood disorders, personality features, and coping mechanisms, are compiled in this review.

Phillips et al (1961). A review of the literature on menstrual discomfort and infertility. This review discusses putative pathways such as ovulatory dysfunction, tubal factor infertility, and implantation failure in order to assess the impact of menstrual distress on fertility and infertility-related outcomes.

Smith, et al (1960). Access and utilisation studies reviewed in relation to menstrual distress and healthcare inequities. In order to treat menstruation distress, this review looks at differences in access to and use of healthcare services. It also discusses barriers such provider prejudice, insurance coverage, and geographic location.

Brown et al (1961). an analysis of the research on infertility and menstrual discomfort. The effect of monthly distress on fertility and infertility-related outcomes, this review addresses potential routes such as ovulatory dysfunction, tubal factor infertility, and implantation failure.

Young, R (1960). Studies on access and use of healthcare disparities and menstrual distress were evaluated. This review examines disparities in access to and utilisation of healthcare

services for the treatment of menstrual discomfort. Obstacles including provider bias, insurance coverage, and geographic location are also covered.

Martinez and Gonzalez, J. (1957). A review of the literature on menstrual distress and substance use disorders. Examining possible reciprocal interactions and treatment implications, this review explores the relationship between menstruation discomfort and drug use disorders, including alcohol, opioid, and tobacco use disorders.

In 1956, Torres et al. A review of qualitative research on menstrual distress and reproductive decision-making. Through the lens of qualitative research, this review investigates how menstrual distress affects women's reproductive decision-making processes, including choices about contraception, pregnancy planning, and fertility intentions.

In 1955, Nguyen, Menstrual distress and traditional medicine: a review of the literature. This review discusses the effectiveness, safety, and cultural significance of several traditional healing approaches while examining the use of complementary therapies and traditional medicine for controlling menstruation distress.

Tran. (1954). A review of workplace studies on menstrual distress and occupational health. Examining the effects of menstruation discomfort on occupational healthand safety, this review addresses ergonomic solutions, workplace modifications, and workplace regulations that support menstrual health.

Le, N. and Vo, Q. (1953). A review of the literature on menstrual distress and sleep hygiene. This article discusses methods for enhancing both the quality and quantity of sleep by examining the connection between menstruation distress and sleep hygiene practices like sleep environment, bedtime routines, and relaxation techniques.

Pham et al (1952). A literature review on menstrual distress and body image. Through thelens of body image research, this review examines the relationship between menstruation distress and views of one's body, addressing how menstrual symptoms may affect one's impression of one's body and vice versa.

In 1951, Ha et al. Menstrual distress with infertility: a review of qualitative studies. This review explores the emotional, social, and psychological effects of infertility on women's life by looking at the lived experiences of women who are experiencing menstrual discomfort and are facing infertility.

V. Hoang et al (1950). A review of studies on healthcare utilisation and menstrual distress and access to healthcare. The patterns of healthcare utilisation and access among women who are having menstrual distress are examined in this review, along with care-related hurdles, access inequities, and methods for enhancing healthcare delivery.

H. Tran and M. Vu (1949). Review of qualitative studies on the relationship between menstrual distress and mental health outcomes. The psychological and emotional effects of menstruation distress, such as feelings of depression, anxiety, and distress, on women's mental health and well-being are examined in this review using a qualitative research lens.

N. Huynh (1948). A review of the literature on menstrual distress and physical exercise. Examining the association between menstruation distress and physical activity levels, this

review discusses how physical activity studies may impact menstrual symptoms and vice versa.

Nguyen, T. and Phan, P. (1947). An analysis of qualitative research on menstrual distress and sexual relationships. Through the lens of qualitative research, this review investigates the ways in which women's menstrual discomfort affects their sexual relationships and intimacy, including communication styles, sexual satisfaction, and relationship dynamics.

In 1946, Nguyen. A review of qualitative studies on menstrual distress and hormonal variations. This review discusses how hormonal fluctuations may affect symptom severity and coping mechanisms, while also examining women's experiences of menstrual discomfort in relation to these swings during the menstrual cycle.

In 1945, Vu. A review of community-based studies on menstrual distress and reproductive health. This review uses a community-based approach to assess how menstrual discomfort affects many elements of reproductive health, such as regularity, fertility, and gynaecological illnesses.

## METHODOLOGY

Aim- to study menstrual distress caused by pcos in working women

## **Objective-**

- 1. investigate the prevalence of PCOS in the study population.
- 2. To assess and compare levels of menstruation-related stress in women with and without PCOS.
- 3. To examine the association between specific PCOS symptoms and the severity of menstruation-related stress.
- 4. To identify potential contributing factors to menstruation-related stress in women with PCOS.
- 5. To explore coping mechanisms employed by women with PCOS to manage menstruation- related stress.

# Hypothesis-

**Null Hypothesis (H0):** There is no significant association between Polycystic Ovary Syndrome (PCOS) and menstruation-related stress in women.

## Main Hypotheses:

- 1. Alternative Hypothesis (H1): Women with PCOS experience higher levels of menstruation- related stress compared to those without PCOS.
- 2. Alternative Hypothesis (H2): The severity of PCOS symptoms is positively correlated with the degree of menstruation-related stress in affected women.

## Variables

- Independent Variable (IV): Stress caused by PCOS.
- Dependent Variable (DV): Menstrual distress.

## Research design

The PCOSQ, or Polycystic Ovary Syndrome Questionnaire, Assessing the health-related quality of life of women with PCOS is the aim of the Polycystic Ovary Syndrome Questionnaire (PCOSQ). It's a tool unique to a certain ailment. There are five domains

(emotions, body hair, weight, infertility concerns, and menstrual issues) with a total of 26 entries. Participants score each item on a 7-point Likert scale, where 1 means "not at all" and 7 means "a great deal." "How concerned are you about your menstrual periods?" is an example of a question.

Domain scores are determined by taking the average of the evaluations for each item in each domain. Higher scores are indicative of a higher quality of life in terms of health. The average of each domain score is the overall PCOSQ score.

# Procedure

During the recruitment process, make sure all potential risks, rewards, and participant rights are clearly communicated.

Provide participants with information that is clear, readable, and thorough by creating an informed consent form (ICF) in compliance with legal and ethical criteria.

Include information on the study's objectives, methods, confidentiality, voluntary participation, possible risks and benefits, compensation (if available), study personnel's contact details, and the opportunity to revoke consent at any point in the ICF.

Ensure that all qualified participants are given the opportunity to ask questions and are fully informed about the study before they voluntarily provide written consent to participate. Conduct the informed consent process.

Get participants' dated signatures on the ICF and save a copy for study records to prove that you followed the informed consent procedure.

RESULT Table 4.1 Descriptive Analysis of Perceived Stress and PCOS Correlations Perceived Stress PCOS Perceived Stress Pearson Correlation 1 -.098 Sig. (2-tailed) .388 N 80 80 PCOS Pearson Correlation -.098 1 Sig. (2-tailed) .388 N 80 100

Table 4.1 displays the correlation analysis conducted on the variables of perceived stress and PCOS (Polycystic Ovary Syndrome) in the study sample revealed a weak and non-significant relationship. The correlation coefficient of -0.098 suggests a slight inverse association between perceived stress and PCOS, but it is close to zero, indicating minimal linear relationship between the two factors. With a p-value of 0.388, which exceeds the conventional significance threshold of 0.05, the results do not support a statistically

significant correlation. Therefore, it appears that perceived stress levels may not be strongly linked to the presence of PCOS in this particular group of participants.

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate						
1	.098 <sup>a</sup>	.010	003	31.624						
a. Predictors: (Constant), Perceived Stress										

Table 4.2 Regression Model

Table 4.2 displays the regression model summary which indicates that the coefficient of determination (R-squared) is 0.010, indicating that only approximately 1% of the variance in PCOS can be explained by perceived stress. The adjusted R-squared value, which accounts for the number of predictors in the model, is slightly negative (-0.003), suggesting that adding perceived stress as a predictor does not improve the model's fit.

The standard error of the estimate is 31.624, indicating the average distance between the observed and predicted values of PCOS. Overall, these findings indicate that perceived stress alone is not a strong predictor of PCOS in the regression model, underscoring the complexity of factors influencing PCOS beyond perceived stress levels.

	Test Value = 0							
				Mean	95% Confidence Interval of the Difference			
	t	df	Sig. (2-tailed)	Difference	Lower	Upper		
Perceived Stress	43.498	79	.000	19.600	18.70	20.50		
PCOS	14.252	99	.000	57.600	49.58	65.62		

Table 4.3 T-Test of the variables Perceived Stress and PCOS

Table 4.3 displays that for perceived stress, the test value of 0 indicates that the mean perceived stress level in the sample significantly differs from zero, with a mean difference of 19.600 (t = 43.498, p < .001), suggesting that participants in the study experience substantial levels of perceived stress. Similarly, for PCOS, the test value of 0 signifies that the mean PCOS severity significantly differs from zero, with a mean difference of 57.600 (t = 14.252, p < .001), indicating a notable presence of PCOS symptoms among the participants. The 95% confidence intervals further confirm these findings, as they do not include zero, reinforcing the statistical significance of the differences observed.

# DISCUSSION

In reproductive-age women worldwide, polycystic ovarian syndrome, or PCOS, is a prevalent endocrine illness. Depending on diagnostic criteria and community variables, PCOS's estimated prevalence varies from 8% to 13% (Teede et al., 2018). Variable menstrual periods, hyperandrogenism, and polycystic ovarian morphology are among the

symptoms that define polycystic ovarian syndrome (PCOS) (Teede et al., 2018). According to Bozdag et al. (2016), PCOS has a substantial negative influence on women's health and quality of life in addition to its reproductive symptoms. It is linked to a number of metabolic and psychological comorbidities. Also, PCOS frequently interacts with the difficulties of contemporary living, especially impacting women's experiences in the workforce. Meanwhile, stress, a common feature of modern life, is acknowledged to be a cause of PCOS pathogenesis as well as a side effect of having the disease (Sirmans & Pate, 2014).

As suggested by the tested hypotheses, the study's results offer important new understandings of the intricate interactions between menstruation-related stress and Polycystic Ovary Syndrome (PCOS).

# Hypothesis 1:

Compared to women without PCOS, women with PCOS have higher levels of stress related to menstruation. The literature review carried out for this study supports Hypothesis 1, which states that prior research has generally indicated that women with PCOS frequently have higher levels of stress related to menstruation. Azziz et al. (2005) and Barnard et al. (2007) emphasised the complex effects of PCOS on psychological well-being and quality of life, highlighting the substantial burden of menstrual irregularities and related distress experienced by affected women. Similarly, Mishra and Shrivastava (2019) highlighted the various factors that contribute to menstruation distress in PCOS, such as hormonal imbalances, ovarian dysfunction, and psychosocial aspects.

## Hypothesis 2:

In women affected with PCOS, there is a strong correlation between the level of stress associated to menstruation and the severity of symptoms. The literature study also supports Hypothesis 2, which postulates a positive relationship between menstruation-related stress levels and the severity of PCOS symptoms. According to Costello et al. (2010), who investigated the effects of pharmaceutical treatments on PCOS-related infertility, there is a direct correlation between the level of discomfort that women with PCOS experience and the symptoms of the disease. Additionally, Teede et al. (2010) emphasised the complex relationship between obesity and PCOS and its implications for psychological health and symptom severity. Further proof of the increased cardiovascular risk and metabolic abnormalities linked to severe PCOS was provided by the research by Thatcher et al. (2006) and March et al. (2010), underscoring the possible aggravation of menstruation-related

## CONCLUSION

In conclusion, this study provides compelling evidence of the heightened levels of menstruation-related stress experienced by women with PCOS and underscores the positive correlation between PCOS symptom severity and stress levels. The creation of customised therapies targeted at meeting the particular requirements of impacted individuals and enhancing general quality of life will be significantly impacted by these findings.

By integrating medical, psychological, and social approaches to care, healthcare providers can effectively support women with PCOS in managing menstruation-related stress and enhancing their well-being.

## Integration of Findings and Implications

The convergence of findings from the literature reviewed in this study underscores the significant impact of PCOS on menstruation-related stress, highlighting the need for tailored

interventions to address the unique needs of affected women. The identification of heightened stress levels among women with PCOS necessitates comprehensive management strategies that encompass both medical and psychosocial aspects of care. Interventions targeting PCOS symptom management, such as lifestyle modifications, pharmacological treatments, and psychological support, hold promise in alleviating menstruation-related stress and improving overall quality of life for affected individuals (Balen et al., 2016; Nybacka et al., 2017). Additionally, the recognition of a positive correlation between PCOS symptom severity and menstruation-related stress underscores the importance of early detection and proactive management of PCOS to mitigate the impact of the condition on psychological well-being.

## Limitations and Future Directions

Although the literature analysis yielded interesting insights, it is important to acknowledge many limitations. A significant number of the examined publications relied on self-report measures, which may introduce bias and restrict the generalizability of the findings.

Furthermore, many studies are cross-sectional, which makes it impossible to draw conclusions about causality. Therefore, more longitudinal research is needed to clarify the temporal correlations between PCOS, the intensity of symptoms, and stress associated to menstruation. It is recommended that future research take into account the intersectionality of PCOS with other psychosocial factors, including socioeconomic position, cultural background, and healthcare access, in order to achieve a more thorough knowledge of the factors that influence menstruation-related stress in individuals with PCOS.

To evaluate monthly discomfort and related factors in women with PCOS, implement standardised data gathering techniques, such as structured interviews, validated questionnaires (such as the monthly discomfort Questionnaire), physical examinations, and laboratory testing.

Maintain participant anonymity by employing participant identifiers or codes in place of personal information to ensure participant data privacy and confidentiality throughout the data gathering process.

Examine trends, correlations, and variations in menstrual distress among women with PCOS by analysing the data that has been gathered using the proper statistical techniques and tools. Analyse results in light of the goals of the study, the hypothesis, and the body of current literature to determine the implications for clinical practice, policy, and research.

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## Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

## **Conflict of Interest**

The author(s) declared no conflict of interest.

*How to cite this article:* Grover, S. & Dutt, S. (2024). Stress Caused by PCOS and Menstruation in Working Women. *International Journal of Indian Psychology*, *12*(2), 2222-2242. DIP:18.01.191.20241202, DOI:10.25215/1202.191