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A Comparative Study of Body Image, Emotional Regulation, Self-Esteem, Coping Styles, and Psychological Distress among Women with Polycystic Ovary Syndrome and a Control Group

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ABSTRACT

Aim: The study aimed to explore differences in body image, emotional regulation, self-esteem, coping styles, and psychological distress among women diagnosed with Polycystic Ovary Syndrome (PCOS) compared to a control group.

Objectives: The objectives were to assess levels of body image satisfaction, emotional regulation strategies (cognitive reappraisal and expressive suppression), self-esteem, coping styles (problem-focused, emotion-focused, and avoidant), and psychological distress, and to compare these variables between women with PCOS and those without the condition.

Sample and Sampling: A total sample of 100 females aged 18–40 years was selected using purposive sampling, comprising 50 women diagnosed with PCOS based on Rotterdam criteria and 50 participants in the control group. Participants were recruited from the Department of Obstetrics and Gynaecology, Jaipur, following defined inclusion and exclusion criteria.

Tools: Data were collected using standardized measures including the Sociodemographic Data Sheet, Emotional Regulation Questionnaire (ERQ), Kessler Psychological Distress Scale (K10), Rosenberg Self-Esteem Scale (RSES), Body Image Satisfaction Scale (BIS), and Brief COPE.

Results: Independent samples t-tests revealed significant differences between the two groups. Women with PCOS reported significantly poorer body image, lower self-esteem, higher use of expressive suppression, and lower use of problem-focused coping compared to the control group. No significant differences were observed in emotion-focused coping, avoidant coping, or cognitive reappraisal.

Discussion: The findings indicate that women with PCOS experience notable psychological vulnerabilities related to body perception, self-worth, emotional expression, and coping patterns. These psychological factors may contribute to increased psychological distress in PCOS. The study highlights the need to integrate psychological assessment and intervention into routine gynecological management of PCOS, emphasizing a biopsychosocial approach to care.

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1. INTRODUCTION

POLYCYSTIC OVARY SYNDROME

PCOS is a complex endocrine condition that is impacted by a range of factors, such as lifestyle and nutrition (Beriberi). While high-sugar diets may aggravate PCOS symptoms through a variety of processes, including alterations to gut flora, the induction of chronic inflammation, increased insulin resistance, increased androgen production. Weight gain and obesity are thought to exacerbate the characteristics that characterise PCOS. (Kazemi M., 2021)

It has been demonstrated that a person's susceptibility to develop PCOS may be influenced by specific genes, gene-gene interactions, or interactions between genes and the environment (Kumar R., 2022). Numerous possible genes with single-nucleotide polymorphisms or mutations have been linked to a range of PCOS symptoms, according to multiple genetic studies. All genes and mutations that affect the ovaries either directly or indirectly are associated with PCOS (Khan M.J., 2019)

PCOS is characterized by hormonal imbalances, specifically involving reproductive hormones, leading to the formation of cysts on the ovaries. These cysts interfere with the regular ovulation process, which prevents eggs from being released and hence reduces fertility. Usually, the cysts that develop from PCOS are sacs filled with fluid that contain immature eggs. This may completely stop ovulation, resulting in irregular menstrual cycles or even amenorrhoea, or the lack of menstruation. This also impact the fertility process where the irregular ovulation makes difficulty in conception (Dennett CC, 2015)

Females with PCOS are more likely than normal to be overweight or obese, and they also have a higher risk of depression, anxiety, stress, eating disorder, fatty liver, sleep apnea, and type 2 diabetes. While there are several therapies available to lessen or eliminate these symptoms, PCOS is not totally reversible. The majority of women with PCOS can live regular lives without experiencing major problems. Both normal-weight and overweight female PCOS patients may experience insulin resistance and hyperinsulinemia. Compared to obese females without PCOS, obese PCOS women appear to have a three-fold increased risk for prediabetes; by the time they are 40 years old, up to 35 percent of obese PCOS women have impaired glucose tolerance (also known as "prediabetes"), and up to 10 percent of these obese women develop type 2 diabetes. This will not only impact the physical health but can also exacerbates psychological problems such as increased distress, anxiety, and depression. Insulin plays a crucial role in regulating neurotransmitters in the brain, such as serotonin and dopamine, which are involved in mood regulation. Insulin resistance may impair the brain's response to these neurotransmitters, leading to mood disturbances and increased risk of depression. (Barbieri)

BODY IMAGE

A person's personal identity is formed in large part by their body image (Silva D., 1992).A person's subjective perception of their own body, independent of how it actually appears, is referred to as their body image (Shoraka H., 2019). The phrase "body image" dates back to the late 1800s. Gestalt psychologists and neurologists were researching the effects of traumatic brain injury or insult on how an individual perceives their body at that time. After investigating this, researchers discovered that people had an internal mental representation of their own bodies, which was subsequently called as body image. Prior to the neurologist Schilder was shedding light on body image as a multifaceted field of study but psychological factors of body experience were rarely examined. Later the term body image have introduce into psychology, the idea of body image is examined from a variety of angles, including social, therapeutic, and developmental aspects. (Burke N L., 2012)

The multidimensional nature of body image comprises Cognitive Component: This includes an individual's ideas and perceptions about their own body. Both positive and negative ideas are possible. These may also be impacted by cultural differences, individual experiences, and social norms. Affective Component: This part addresses the affective, or emotional, aspects of body image. It includes the emotions people have about their bodies. Body contentment can result from positive body image, whereas body dissatisfaction might result from negative body image. Aspect of Perception: The perceptual component pertains to an individual's perception of their body's size, form, and particular body parts. Subjective perception and the objective reality of one's body might occasionally be at odds with one other. The behaviours people do with regard to their bodies make up the behavioural component. This can involve doing things like looking in the mirror, following a certain fitness regimen, getting cosmetic surgery done, or even covering up certain physical areas. The fact that body image is multifaceted suggests that a person's understanding of their body extends beyond a straightforward visual evaluation. It entails the intricate interaction of ideas, feelings, and actions. Furthermore, a range of circumstances, including peer pressure, media portrayals, cultural norms, and individual experiences, might have an impact on these components (Yamamotova A, 2017).

EMOTIONAL REGULATION

Emotion is a complex and multifaceted phenomenon that has been approached and defined in various ways by different theories and perspectives. Emotions are considered to address adaptive problems, facilitate decision-making, prepare for rapid motor responses, and provide information about the match between the organism and its environment (Carver, 1998). Emotion regulation refers to the processes through which individuals manage, modulate, and control their emotions in response to various stimuli or situations. It involves a range of strategies, both conscious and unconscious, aimed at directing or altering the course of emotional experiences People engage in emotion regulation to avoid being overwhelmed by intense emotions and to adaptively respond to different situations. The concept encompasses various ways individuals handle their emotions, including cognitive, behavioral, and physiological processes (Davidson, 1998)

People encounter a wide array of stimuli in their daily lives that have the potential to evoke emotional responses. These can be internal sensations or external events. Emotion regulation is an ongoing process, suggesting that individuals are frequently adjusting their emotional experiences. This can happen at a subtle level, preventing every emotional trigger from leading to intense emotional states (Ochsner, 2005)

The functions of emotional regulation are categorized into three main types: need-oriented, goal-oriented, and person-oriented functions. Need-Oriented Functions: Traditionally, psychologists have assumed that emotion-regulation efforts serve hedonic needs, aiming at promoting pleasure and preventing pain (Berridge, 2003). Negative emotional states are

considered costly as they mobilize mental and physical resources, making need-oriented emotion regulation adaptive. This type of regulation often has an impulsive quality, as it is directed towards immediate gratification (Panksepp, 1998). Goal-Oriented Functions: Emotion regulation is not solely driven by hedonic needs. Social interactions and various goals may require individuals to regulate both negative and positive emotions. For example, people may need to remain 'cool and collected' in social interactions (Erber, 1996). Emotion regulation efforts are motivated by the utility of achieving certain states that align with specific goals, such as the belief that fear and worry promote the attainment of avoidance goals (Tamir, 2007 a).

The menstrual cycle is indeed a complex process involving various systems within the female body. Estrogen and progesterone, two key hormones, play vital roles in orchestrating this cycle. The interplay between estrogen and progesterone across these systems can lead to various physical and emotional symptoms commonly associated with the menstrual cycle, such as breast tenderness, bloating, mood swings, and fatigue. Estrogen receptors are found throughout the brain, impacting mood, cognition, and behavior. Changes in hormone levels during the menstrual cycle can influence mood swings, irritability, and other emotional states (Farage MA, 2009).

SELF ESTEEM

Definition of self-esteem can be understood through various perspectives as outlined by different psychologists and researchers. According to Rosenberg (1965), self-esteem is an individual's overall positive evaluation of themselves. High self-esteem involves an individual respecting and considering themselves worthy (Rosenberg, 1965). Sedikides and Gress (2003) emphasize that self-esteem is an individual's subjective appraisal of their own self-worth. It includes feelings of self-respect and self-confidence, along with positive or negative views about oneself (Sedikides, 2003).

Self-esteem is related to personal beliefs about skills, abilities, and social relationships. It involves cognitive appraisals about general self-worth and affective experiences linked to these global appraisals (Murphy, 2005). Wang and Ollendick (2001) state that self-esteem involves evaluating oneself followed by an emotional reaction towards oneself. Both evaluative and affective elements are present in various definitions and theories of self-esteem (Wang, 2001).

Brown, Dutton, and Cook distinguish three ways in which the term "self-esteem" is used: (a) global or trait self-esteem, (b) self-evaluation, and (c) feelings of self-esteem. These categories cover characteristically feeling about oneself, evaluating various abilities and attributes, and momentary emotional states (Brown, 2001). Webster’s dictionary provides a simple definition, stating that self-esteem is "satisfaction with oneself." Another edition of the same dictionary defines it as "one's good opinion of one's dignity or worth." Hewitt suggests a transformation of the view of self-esteem from a universal psychological trait to a socially constructed emotion grounded in mood. This perspective is based on the idea that self-esteem is a reflexive emotion developed over time in social processes (Hewitt, 2002)

The multidimensional nature of self-esteem: Self-esteem can be viewed as a complex construct with different dimensions. It can refer to the overall self or specific aspects like social standing, racial or ethnic identity, physical features, athletic skills, and job or school performance. Theorists have identified various types of self-esteem, such as contingent vs. noncontingent, explicit vs. implicit, authentic vs. false, stable vs. unstable, and global vs. domain-specific (Heatherton, 2003)

COPING STYLES

Managing stressful events, both internal and external, by the mobilisation of thoughts and behaviours is known as coping (Folkman S, 2004). It's important to differentiate coping from defense mechanisms. Defense mechanisms are typically unconscious psychological strategies that individuals use to protect themselves from anxiety or other negative emotions. Unlike coping strategies, which are usually conscious and intentional, defense mechanisms operate at an unconscious level and serve to distort reality or deny the existence of a threatening situation (M, 1998).

'Coping styles' are a collection of relatively consistent features that determine an individual's behaviour in reaction to stress. They represent the various ways in which individuals deal with stressors. These remain consistent over time and in different situations (de Boer SF, 2017).

Reactive coping involves responding to stressors as they arise, often in the moment, while proactive coping involves taking steps to prevent or mitigate future stressors before they occur. Each approach has its own strengths and weaknesses, as you outlined. Proactive coping can be advantageous in stable environments because individuals who employ this strategy tend to be more structured and prepared, thus better able to anticipate and manage potential stressors. On the other hand, reactive coping may be more effective in dynamic or unpredictable environments, as it allows individuals to adapt quickly to changing circumstances (Coppens CM, 2010)

There are four major categories of coping strategies these include Problem focused, Emotion Focused, Meaning Focused

and Social Focused. Problem focused involves addressing the problem causing the distress directly. Strategies under this category aim to change or manage the source of stress. Examples include active coping (taking steps to remove or reduce the stressor), planning (developing a strategy to deal with the problem), restraint coping (inhibiting impulsive reactions), and suppression of competing activities (putting aside other tasks to focus on the problem). Emotion focused coping aims to reduce the negative emotions associated with the problem rather than addressing the problem itself. Strategies here focus on managing emotional responses to stress. Examples include positive reframing (finding a positive spin on the situation), acceptance (acknowledging and coming to terms with the situation), turning to religion (finding solace in faith or spirituality), and humour (finding humour in the situation to lighten the mood). Meaning focused involves deriving and managing the meaning of the situation. It's about finding significance or purpose in the experience, which can help individuals cope with stress. Examples include seeking understanding or making sense of the situation through cognitive strategies. Social focused (support seeking) involves seeking emotional or instrumental support from others to cope with stress. It recognizes the importance of social connections in dealing with challenging situations. Examples include seeking advice, seeking emotional support from friends or family, or engaging in group activities for distraction or comfort (Folkman S, 2004).

2. METHODOLOGY

Aim of the study:
To explore the relationship of emotional regulation, body image, self- esteem, coping styles and psychological distress among polycystic ovary syndrome.

Objectives:
To assess the levels of emotional regulation, body image, self-esteem, coping styles and psychological distress in patients with PCOS and control group.

Hypotheses:
There will be no relationship exist between the level of body image, emotional regulation, self-esteem, coping styles and psychological distress in patients with PCOS and control group

Research design:
Cross sectional research design.

Participants
Sample Size:
The sample size of 50 females diagnosed with polycystic ovary syndrome from the department of obstetrics and gynaecology and 50 control group sample were included in the study

Sampling Technique:
Purposive sampling

Inclusion Criteria:
- Patients diagnosed with PCOS
- 18- 40 years old females
- Education level upto 5th garde
- Patients who will give the consent.

Exclusion Criteria:
- Patients with other reproductive conditions
- Patients diagnosed with any chronic medical or psychiatric illness
- Patients with any organic conditions and intellectual disability.

Tools used:
The following tools were used in the study:

1. Sociodemographic tool:
It consists of general characteristics of the sample. The variables include name, age, education, occupation, socioeconomic status, and diagnosed illness etc.

2.Emotional regulation questionnaire (ERQ; Gross & John, 2003):
Emotional regulation scale was developed by Gross and John in 2003. It was developed in order to find out the emotional regulation strategies people use. This scale comprises of 10 item. This scale consists of two types of strategies: namely cognitive reappraisal and expressive suppression. Cognitive reappraisal scale consists of 6 item whereas expressive suppression consists of four items. 7-point Likert scale is used to mark the respondent answers. This scale has adequate convergent validity and internal consistency

3. Kessler Psychological Distress scale (Kessler et al., 2003):
Kessler in 2003, developed ten item rating scale to assess the psychological distress. This test also helps to assess the presence of mental health problems like depression etc. This test can be used for clinical as well as research purpose. Here, the respondent answers each item on 5- point Likert scale. The test scores ranges from 10-50. Its reliability was found to be 0.84 & validity was found to be 0.95.

4. Rosenberg Self-Esteem Scale (RSES; Morris Rosenberg, 1965)
Morris Rosenberg developed Self-esteem scale in 1965. It assesses both negative as well as positive feeling about oneself. The scale consists of 10 items that are responded to on a four- point Likert-type scale, which ranges from strongly agree to strongly disagree. This scale is effective in both clinical assessments and research studies on self-concept, emotional well-being, and mental health. The internal consistency of test was found to be 0.77.

5. Body Image Satisfaction Rating Scale (BIS) (Holsen, Jones, & Birkeland, 2012)
The Body Image Satisfaction Scale was developed by Holsen, Jones, & Birkeland in 2012. The scale used to measure an individual's satisfaction or dissatisfaction with their body image, assessing how individuals perceive and feel about their physical appearance. The scale usually includes questions that require respondents to evaluate their contentment with various aspects of their body or physical appearance. The scale shows good psychometric properties with internal consistency of 0.83

6. Brief COPE (Carver in 1997)
The Brief COPE, developed by Carver in 1997, is a self-administered questionnaire designed to evaluate both adaptive and maladaptive coping strategies in response to stressful events. It consists of 28 items rated on a 4-point Likert scale (0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Very much). The Brief COPE measures 14 different coping strategies. Each strategy's score ranges from zero to six, with higher values indicating more frequent use of that strategy. It identifies primary coping styles, including Avoidant Coping, characterized by subscales such as denial, substance use, venting, behavioural disengagement, self-distraction, and self-blame, and Approach Coping, characterized by subscales such as active coping, positive reframing, planning, acceptance, seeking emotional support, and seeking informational support. The questionnaire demonstrates strong content validity and reliability, with good test-retest consistency. Raw scores are transformed into percentile ranks, and the tool shows reliable internal consistency.

7 Procedure of the study:
After taking ethical clearance from the department of clinical psychology and ethical committee MGMCH, the patients with Polycystic ovary syndrome will be contacted from various department of gynaecology, Jaipur. The participants' written consent will be taken for the study. Tools will be administered individually. All the samples for the study will be selected based on inclusion and exclusion criteria of the study. Basic demographic details will be taken. After that to assess the study variable tools like emotional regulation scale, Kessler psychological distress scale, Rosenberg self-esteem scale, Body image satisfaction rating scale and brief COPE were used.

8 Statistical Procedure:
SPSS Software 21 will be used for statistical calculation.

3. RESULTS

This chapter cover the details regarding the results of the research conducted on “Body Image, Emotional Regulation, Self Esteem, Coping Styles and Psychological Distress In Patients With Polycystic Ovary Syndrome.”
Results obtained are presented in the following order:

Section-I
Socio-demographic variables such as age, gender, education, occupation, marital status, type of family, residence, Socioeconomic Status, Religion, any Diagnosed Psychiatric condition, Family History of Psychiatric Illness, any History of Psychotherapy or Psychiatric Condition

Section-II

Comparison of Polycystic Ovary Syndrome Patients and Control Group on variables including Body Image, Emotional Regulation, Self Esteem, Coping Styles and Psychological Distress

Section-1

Table 1 shows the socio-demographic variables such as age, gender, education, occupation, marital status, type of family, residence, Socioeconomic Status, Religion, any Diagnosed Psychiatric condition, Family History of Psychiatric Illness, any History of Psychotherapy or Psychiatric Condition.

Sociodemographic Characteristics of all the participants.

	PCOS				Control Group			
Sample Description	N	(%)	M	SD	N	(%)	M	SD
Age			23.68	3.41			24.16	3.22
Gender								
Female	50	(100%)			50	(100%)		
Education								
High school	9	(18%)			7	(14%)		
Graduation	23	(46%)			16	(32%)		
Post-Graduation	16	(32%)			25	(50%)		
Others	2	(4%)			2	(4%)		
Occupation								
Student	38	(76%)			42	(84%)		
Homemaker	4	(8%)			2	(4%)		
Private Employee	3	(6%)			2	(4%)		
Government Employee	5	(10%)			4	(8%)		
Marital Status								
Unmarried	90	(90%)			45	(95%)		
Married	10	(10%)			5	(5%)		
Divorced	0	(0%)			0	(0%)		
Separated	0	(0%)			0	(0%)		
Type of Family								
Nuclear	42	(84%)			40	(80%)		
Joint	8	(16%)			10	(10%)		
Residence								
Rural	40	(80%)			40	(80%)		
Semi-Urban	8	(16%)			8	(16%)		
Urban	2	(4%)			2	(4%)		
Socioeconomic Status								
Lower	6	(12%)			8	(16%)		
Middle	42	(84%)			40	(80%)		
Upper Middle	2	(4%)			2	(4%)		
High	0	(0%)			0	(0%)		
Religion								
Hinduism	41	(82%)			41	(82%)		
Buddhism	3	(6%)			3	(6%)		
Jainism	6	(12%)			6	(12%)		
Christianity	0	(0%)			0	(0%)		
Islam	0	(0%)			0	(0%)		
Other	0	(0%)			0	(0%)		
Any Diagnosed Psychiatric condition								
Yes	0	(0%)			0	(0%)		
No	50	(100%)			50	(100%)		
Family History of Psychiatric Illness								
Yes	7	(14%)			9	(18%)		

No	43	(86%)			41	(82%)		
Any History Of Psychotherapy or Psychiatric Condition								
Yes	0	(0%)			4	(8%)		
No	50	(100%)			46	(92%)		

Note. N= 100 (n=50 for each group)

The current study had a sample size of 100 which included 50 participants of Polycystic ovary syndrome and 50 participants from control group between the age between age range of 18-40 years. Table 4.1 shows the sociodemographic details of all the participants. Mean age of the PCOS patient was found to be 23.68 (SD=3.41) and Mean age of Control Group was found to be 24.16 (SD= 3.22). The PCOS group comprises of 18% (n=9) participants from high school student, 46% (n=23) were graduate, 32% (n=16) were post graduate while 4% (n=2) people were from other group. The majority of participants were students 76% (n=38), 8% (n=4) were homemaker, 6% (n=3) were private employee, 10% (n=5%) were government employee. 90% (n=90) females of PCOS group were unmarried and 10% were married (n=10). 84% (n=42) participants were living in nuclear family while 16% (n=8) were living in joint family. 80%(n=40) were residence of rural area, 16 % (n=40) were semi- urban and 4% (n=2) were urban. Additionally, 12 % (n=6) PCOS participants were belonging to low socioeconomic status, 84% (n=42) were belonging to middle socioeconomic status, 4% (n=2) were belonging from upper middle socioeconomic status. 82% (n=41) were Hindu, 6% (n=3) were Buddhist and 12 % (n=6) were Jainism. No PCOS participants were found to have any diagnosed psychiatric condition. 14% (n=7%) PCOS patients were having family history of psychiatric illness whereas 86% (n=43) were not having any family history of psychiatric illness.

The control group comprises of 14% (n=7) participants from high school student, 32% (n=16) were graduate, 50% (n=25) were post graduate while 4% (n=2) people were from other group. The majority of participants were students 84% (n=42), 4% (n=2) were homemaker, 4% (n=2) were private employee, 4% (n=2), 8% (n=4) were government employee. 95% (n=45) females of control group were unmarried and 5% (n=5) were married (n=10). 80% (n=40) participants were living in nuclear family while 10% (n=10) were living in joint family. 80%(n=40) were residence of rural area, 16 % (n=40) were semi- urban and 4% (n=2) were urban. Additionally, 16 % (n=8) control group participants were belonging to low socioeconomic status, 80% (n=40) were belonging to middle socioeconomic status, 4% (n=2) were belonging from upper middle socioeconomic status. 82% (n=41) were Hindu, 6% (n=3) were Buddhist and 12 % (n=6) were Jainism. No control group participants were found to have any diagnosed psychiatric condition. 18% (n=9%) Control group patients were having family history of psychiatric illness whereas 82% (n=41) were not having any family history of psychiatric illness.

Section-II

COMPARING MEANS

Table 2 shows the Comparison of Mean, SD and Level of significance on independent t- Test of PCOS group and Control Group on variables including Body Image, Emotional Regulation, Self Esteem, Coping Styles and Psychological Distress.

	PCOS Group		Control group					
	M	SD	M	SD	Df	t	P	Cohen's d
Body Image	7.14	5.083	2.42	2.158	98	6.044	.000	1.305642
Emotion Focused Coping	24.94	2.986	23.90	2.957	98	1.750	0.83	0.37803
Problem Focused Coping	19.52	2.797	22.12	1.923	98	-4.484	0.000	-1.17008
Avoidant Coping	11.88	1.923	12.06	2.064	98	-.451	0.653	-0.09747
Self Esteem	16.02	2.045	17.36	2.380	98	-3.020	0.003	-0.65231
Reappraisal	27.40	4.449	27.06	4.321	98	.388	.699	0.083741
Suppression	15.84	3.733	13.24	3.788	98	3.457	0.001	0.746775

On Body Image, the PCOS group had a mean score of 7.14 with SD= 5.083 which was found to be greater than the mean score (M=2.42, SD=2.15) of control group. The finding indicated that there is a statistically significance difference between body image of PCOS and Control group (t=6.004, df=98, p=<.05).

When the emotion focused coping was compared between the two groups, it was found that PCOS group had higher mean (M= 24.94, SD= 2.98) when compared to the control group mean value (M=23.90, SD= 2.97). These finding indicated that there is a no statistical significance difference between emotion focused coping of PCOS and Control group (t=1.750,

df=98, p=>.05).

Moreover, when the problem focused coping were compared between the control group (M=22.12, SD= 1.923) and PCOS group (M=19.52, SD= 2.797), it was observed that there is a significant difference between both the groups (t= -4.484, df=98, p=<.05). with the control group having a tendency to use problem focused coping more than the PCOS group.

On avoidant coping, the PCOS group had a mean score of 11.88 with SD= 1.923 and control group has mean score of (M=12.06, SD=2.064). The finding indcated that there is no significant difference exist between both the groups (t=-.451, df=98, p=>.05).

Furthermore, when the PCOS group and control group were compared on the basis of mean score of self-esteem the mean score value for PCOS was found to be 16.02 (SD= 2.045) and for control group it was found to be M=17.36, SD=2.045. The finding indicated that significant difference exist between both the groups, with control group having high self-esteem than PCOS group (t=-3.020, df=98, p=<.05).

When the reappraisal of both the group were compared on the basis of mean score it was found that mean score of PCOS was M= 27.40, SD=4.449 and mean score of control group was 27.06, SD=4.321. These finding indicated that there is a no statistical significance difference between reappraisal of PCOS and Control group (t=1.750, df=98, p=>.05).
On suppression the means score for PCOS is M=15.84, SD= 3.733 which was found to be greater than mean score (M=13.24, SD=3.788) of Control group. The finding indicated that there is a statistical significance difference between suppression of PCOS and control group.

4. DISCUSSION

The clinical diagnosis of PCOS was based on Rotterdam criteria. According to which diagnosis of PCOS requires two of the three symptoms which are as follows: oligo—anovulation (irregular or absent menstrual periods), hyperandrogenism (excess levels of male hormones leading to symptoms such as hirsutism or acne) and polycystic ovarian morphology (PCOM) (Fauser et.al, 2004.). PCOS is characterized by hormonal imbalances, specifically involving reproductive hormones, leading to the formation of cysts on the ovaries. These cysts interfere with the regular ovulation process, which prevents eggs from being released and hence reduces fertility. Usually, the cysts that develop from PCOS are sacs filled with fluid that contain immature eggs. This may completely stop ovulation, resulting in irregular menstrual cycles or even amenorrhoea, or the lack of menstruation. This also impact the fertility process where the irregular ovulation makes difficulty in conception (Dennett, 2015). According to research women with PCOS may be more neurotic, anxious, and depressed than women without this condition. This suggests a possible connection between mental health problems and PCOS. (Barry, 2011). While emotion-focused coping focuses on controlling emotional reactions to situations that cannot be changed, problem-solving coping is taking proactive steps to alter or lessen the stressful circumstance. Coping mechanisms have been shown to have a major impact on the quality of life of women with Polycystic Ovary Syndrome (PCOS (Vollman, 2007)

The aim of the study to explore the relationship of emotional regulation, body image, self- esteem, coping styles and psychological distress among polycystic ovary syndrome. The rationale behind this study is that the patients with PCOS may experience psychological distress. However, it has not yet been determined which psychological components contribute to psychological distress in POCS. Also previous researches have explored the presence of emotional regulation, body image and self-esteem but they haven't explored that will that lead to psychological distress in patients with PCOS or not. Researches have explore the presence of self-esteem, body image, coping styles and emotional regulation in causing psychological distress but it has been studied in eating disorder, university students, adolescents and breast cancer patients. This present study focuses on exploring the psychological aspects such as emotions regulation, self-esteem, coping styles and body image in causing psychological distress in patient with PCOS. The study was conducted with sample population 100 (50 PCOS and 50 control group), all the participants were selected based on inclusion and exclusion criteria. The study focuses on examining the socio-demographic factors, emotional regulation, body image, self-esteem, coping styles and psychological distress of patients with and without PCOS in Indian context.

For the purpose of assessment, standardized and updated tools were administered on the sample group of the study. The tools used were sociodemographic tool, emotional regulation questionnaire (ERQ; Gross& John,2003), Kessler psychological distress scale (Kessler et al., 2003), Rosenberg self- esteem scale (RSES; Morris Rosenberg, 1965), Body image satisfaction scale) (Holsen, Jones, & Birkeland, 2012), Brief COPE (Carver in 1997).

When the results were analysed, it was observed that, in patient with PCOS sociodemographic data 23.68 is the mean age and SD was 3.41. In terms of education, it was found that 18% were high school student, 46% were graduate, 32% were postgraduate and 4% were others. When occupation was assessed 76% were student, 8% were homemaker, 6% were private

employee and 10% were government employee. When marital status was assessed 90% females were unmarried and 10% females were married. It was also found that 84% females were living in nuclear family whereas 16% were living in joint family. Regarding locality, 80% females were from rural background, 16% were from semi-urban and 4% were urban. The socio- economic status of PCOS group was found to be 12% belonging to low socioeconomic status, 84% were from middle socioeconomic population and 4% were from upper middle. When religion was analysed it was found that 82% were belonging to Hinduism, 6% were Buddhist and 12% were Jainism. 14% females with PCOS were having family history of psychiatric illness.

Additionally, when results of control group were analysed it was observed that in patient without PCOS sociodemographic data 24.16 is the mean age and SD was 3.22. In terms of education, it was found that 14% were high school student, 32% were graduate, 50% were postgraduate and 4% were others. When occupation was assessed 84% were student, 4% were homemaker, 4% were private employee and 8% were government employee. When marital status was assessed 95% females were unmarried and 5% females were married. It was also found that 80% females were living in nuclear family whereas 10% were living in joint family. Regarding locality, 80% females were from rural background, 16% were from semi-urban and 4% were urban. The socio- economic status of control group was found to be 16% belonging to low socioeconomic status, 80% were from middle socioeconomic population and 4% were from upper middle. When religion was analysed it was found that 82% were belonging to Hinduism, 6% were Buddhist and 12% were Jainism. 18% females without PCOS were having family history of psychiatric illness. 8% females belonging to control group were having history of psychotherapy.

The first objective was to assess the relationship between emotional regulation a, body image, self-esteem, coping styles and psychological distress in patient with PCOS and without PCOS. As illustrated by Table 2, on comparing Body Image, the PCOS group had a mean score of 7.14 with SD= 5.083 which was found to be greater than the mean score (M=2.42, SD=2.15) of control group. The finding indicated that there is a statistically significance difference between body image of PCOS and Control group (t=6.004, df=98, p=<.05). These findings could be explained that due to increased psychological distress i.e. anxiety and depression, patients with PCOS experience high body image dissatisfaction and decreased self-esteem as compared to women without PCOS. These findings are consistent with the study by Bedi, 2022, who concluded that self-esteem and body image are correlated with each other. Additionally, it was also supported with the findings of Alur-Gupta et.al. 2019 who concluded that with the increase in level of anxiety and depression, body image satisfaction in PCOS will also increase. Another study by Geller, 2020 found that there is a positive correlation between body image dissatisfaction and suicidality, depression and anxiety.

When the emotion focused coping was compared between the two groups, it was found that PCOS group had higher mean (M= 24.94, SD= 2.98) when compared to the control group mean value (M=23.90, SD= 2.97). These finding indicated that there is a no statistical significance difference between emotion focused coping of PCOS and Control group (t=1.750, df=98, p=>.05). These findings were supported by Basirat, et.al. 2020 who found that no significance difference exist between infertile PCOS women and control group in terms of emotional focused coping. Additionally, Borges & Lokesh 2023, found that no difference exist between coping styles of both patients with PCOS and Control group.

Moreover, when the problem focused coping were compared between the control group (M=22.12, SD= 1.923) and PCOS group (M=19.52, SD= 2.797), it was observed that there is a significant difference between both the groups (t= -4.484, df=98, p=<.05). with the control group having a tendency to use problem focused coping more than the PCOS group. These findings could be supported with the study of Carron et.al, 2017., who found that women with Polycystic ovary syndrome are less likely to use problem focused coping then women without Polycystic ovary syndrome.

On avoidant coping, the PCOS group had a mean score of 11.88 with SD= 1.923 and control group has mean score of (M=12.06, SD=2.064). The finding indcated that there is no significant difference exist between both the groups (t=-.451, df=98, p=>.05). These findings were supported by Basirat, et.al. 2020 who found that no significance difference exist between infertile PCOS women and control group in terms of avoidant coping. Additionally, Borges & Lokesh 2023, found that no difference exist between coping styles of both patients with PCOS and Control group.

Furthermore, when the PCOS group and control group were compared on the basis of mean score of self-esteem the mean score value for PCOS was found to be 16.02 (SD= 2.045) and for control group it was found to be M=17.36, SD=2.045. The finding indicated that significant difference exist between both the groups, with control group having high self-esteem than PCOS group (t=-3.020, df=98, p=<.05). These findings were supported with the findings of Tay, 2019, who found that women with Polycystic ovary syndrome has lower self-esteem. Another study by Duchesne, 2017 suggested that poor body image perception lower the self-esteem which further leads to psychological distress. Additionally, Bazarganipour, 2013 found that women with Polycystic ovary syndrome had lower level of self-esteem.

When the reappraisal of both the group were compared on the basis of mean score it was found that mean score of PCOS

was M= 27.40, SD=4.449 and mean score of control group was 27.06, SD=4.321. These finding indicated that there is a no statistical significance difference between reappraisal of PCOS and Control group (t=1.750, df=98, p=>.05). These findings were supported by Johnson & Fida, 2023, who found that no difference exist in emotional regulaton strategy in both PCOS and control group.

On suppression the means score for PCOS is M=15.84, SD= 3.733 which was found to be greater than mean score (M=13.24, SD=3.788) of Control group. The finding indicated that there is a statistical significance difference between suppression of PCOS and control group. These findings were supported with the findings of Pokora et.al, 2022 in his study which indicated that females with Polycystic Ovary Syndrome has high levels of suppressed emotions as compared to the control group.

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