# MEDIATING ROLE OF COPING BETWEEN BODY DISSATISFACTION AND MENTAL HEALTH PROBLEMS AMONG WOMEN WITH PCOS

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## **Abstract**

**Background:-**Polycystic ovarian syndrome serves as a challenge for women globally with a never ending struggle with body dissatisfaction and mental health problems.

**Objective:**-To assess body dissatisfaction in women with PCOS and To determine the mediating effect of coping strategies "Emotion focused", "Problem focused" and "Dysfunctional coping" between body dissatisfaction and mental health problems "Anxiety" and "Depression" among women diagnosed with polycystic ovarian syndrome living in Islamabad, Pakistan.

**Design:**-This cross sectional study was conducted on 100 women from Islamabad they were approached through various OB/Gynea clinics and fertility groups on social media. Participants filled out questionnaires 1) Body image action and acceptance questionnaire, 2) Brief cope inventory and 3) Mental health inventory along with a demographic form.

**Results:**-In a total of 100 women 92 women were in young adulthood (20 - 40 years) and 8 women were in middle adulthood (40 - 60 years). The data regarding age was categorized using Erikson's psychosocial theory. The mediation analysis shows that body dissatisfaction has a significant direct effect on mental health of women; "Anxiety" (P=0.03) and "Depression" (P=0.01). Furthermore, the mediating analysis suggest that there is partial mediated between body dissatisfaction and anxiety of coping strategies (EFC M= -0.0077; P=0.07, PFC M= 0.0122; P=0.25 and DCS M= 0.0517; P=0.01) whereas mediating analysis of coping strategies between body dissatisfaction and depression show (EFC M= -0.0121; P=0.01, PFC M= -0.0040; P=0.73 and DCS M= 0.0492; P=0.02).

**Conclusion:**-The study shows a positive correlation between body dissatisfaction and mental health problems "Anxiety" and "Depression" whereas, the mediation is significant for emotion focused coping and dysfunctional coping between body dissatisfaction and mental health problems though, problem focused coping does has partial mediation which can be studied in future to generate significant findings.

**Keywords:**-Body Dissatisfaction, Mental Health Problems, Anxiety, Depression, Coping Strategies, Emotion Focused Coping, Problem Focused Coping, Dysfunctional Coping, Polycystic Ovarian Syndrome, Mediation Analysis, Islamabad, Pakistan.

## **INTRODUCTION:**

Prevalence of Polycystic Ovarian Syndrome:

The condition of the polycystic ovarian syndrome was initially explained by Stein and Leventhal, (1935). Current statistics estimate that this condition affects 6% to 20% of the female population. These numbers reflect the females of reproductive age and the prevalence depends on the diagnostic criteria (Witchel et al., 2019). Commonly, Polycystic ovarian syndrome starts to prevail

facial or body hair and weight gain (National Health Services, 2017).

during puberty however, it is difficult to diagnose it until later years and usually by that time the condition drastically proceeds (Doretto et al., 2020). According to recent studies, the pervasiveness of polycystic ovarian syndrome has increased over the previous decade and has been reported to be 52% more in Pakistani women than in western women (Akram & Roohi, 2015). The National Health Services, United Kingdom describe the medical condition as a disruption in a woman's menstruation cycle that indicates the ovaries are not releasing eggs regularly. Besides this, the National Health Service criteria for polycystic ovarian syndrome also include a high level of androgen, commonly known as the male hormone; this can cause out-of-proportion physical appearances such as excess

## **Body Dissatisfaction in Females:**

Studies have proved that polycystic ovarian syndrome has a drastic impact on quality of life for women. A multivariate analysis was conducted and it revealed that patients of depression have low quality of life (Greenwood et al., 2017). Since, out of proportion physical appearance is a feature of polycystic ovarian syndrome hence body dissatisfaction was used to analyze female's perception regarding their physique. Body dissatisfaction is defined as the negative evaluation of one's body and this negative thought pattern is associated with various psychological and behavior problems. This is a form of cognitive thought pattern that promotes various mental health problems and it is present across all age cohorts despite gender or ethnicity (Heider et al., 2018). According to a survey conducted, approximately one in two women living in the United Kingdom have reported that they felt more concerned about the way they looked during the time frame of lockdown (Robertson et al., 2021). Frederick and colleagues in a mass survey conducted in the year 2012 depicted that the ratio of women dissatisfied with their body is somewhere between 20% to 40%. Most recent researches have been able to validate this claim. A study was conducted which proved that women comparatively spend above average hours of their lives to seek and obtain their ideal body image (Quittkat et al., 2019). Previous research has proven that depression is four times higher in women suffering from polycystic ovarian syndrome compared to women with healthy endocrine and reproductive system (Zaremobini et al., 2018).

## Body Dissatisfaction correlated with Mental Health Problems:

Various researches have been conducted to explain the association between body dissatisfaction and mental health problems in general population however, comparatively, such researches on special population of PCOS (Satghare et al., 2019). However, these researches focus on understanding the quality of life by analyzing a large sample size. For example a study was carried out in Australia with five thousand two hundred and twenty five women. The study concluded that more body dissatisfaction was correlated with poor physical and mental health related quality of life and declining psychosocial functioning (Santana et al., 2013). Previously, researchers highlighted body dissatisfaction as a risk factor in the prevalence of various adverse psychological concerns which primarily include eating disorder (Ferrari et al., 2013) and depression or for some depression like symptoms (Petroski et al., 2012). Furthermore, these correlations are independent of the well-researched association between symptoms of eating disorders and the element of body dissatisfaction. Some of these studies suggested that the relation between body dissatisfaction and physical health related quality of life is weak compared to the correlation with mental health related quality of life, this shows that the link of body dissatisfaction is mostly with psychology rather than physiology.

## Body Dissatisfaction and Mental Health Problems among women with PCOS:

A recent research was directed on "non-pregnant women between the age of 18 - 50 at the university of Pennsylvania Penn PCOS Centre and Gynecology Clinics" using the mediating model with the variables of body image distress, anxiety and depression among the population of polycystic ovarian syndrome. The results showed an above average prevalence of body image distress among women with PCOS. The results further explained an association of body image distress with specific mental health problems of depression and anxiety. This research had multiple confounds such as "age", "BMI", "race" and "socioeconomic status". One significant finding of this research showed that some characteristics of body image distress either fully or partially were

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serving as mediators among variations of "depression and anxiety scores between the groups" (Alur-Gupta et al., 2019). There is clear correlation between excessive and rapid body changes and the development of polycystic ovarian syndrome. There is ample evidence to support this relation, these studies assess data from epidemiological, pathophysiological and genetic studies. Researches have revealed that ghrelin (hunger hormone) is the only known circulatory hormone that affects the peripheral and specifically targets the food intake and promote adiposity which is linked with insulin resistance among patients diagnosed with polycystic ovarian syndrome (Altug et al., 2011). There have been some researches in the past that explore the community's understanding of mental illness. Many studies have found variations in the manifestation of mental health and its association with culture for instance, emotion regulation is widely studied in the Pakistani community residing in the country and abroad (Bhugra et al., 2003). The concept of this topic is to highlight a major physiological concern of polycystic ovarian syndrome specifically in Pakistani

mental illness. Many studies have found variations in the manifestation of mental health and its association with culture for instance, emotion regulation is widely studied in the Pakistani community residing in the country and abroad (Bhugra et al., 2003). The concept of this topic is to highlight a major physiological concern of polycystic ovarian syndrome specifically in Pakistani women. The topic addresses the issue of female mental health and through numerical data, it will determine the need to implicate mandatory counselling for women dealing with the common reproductive and metabolic issue of PCOS. Studying coping strategies can help understand the current mental health status of any target population. Research on such a robust factor identifies causes of distress and develops evolved methods of programs to increase coping and promote adaptive coping strategies.

#### **OBJECTIVE:**

- To assess "Body Dissatisfaction", "Mental Health Problems" and "Coping Strategies" in women with polycystic ovarian syndrome.
- To determine the mediating effect of coping strategies "Emotion focused", "Problem focused" and "Dysfunctional coping" between body dissatisfaction and mental health problems of "Anxiety" and "Depression" among women diagnosed with polycystic ovarian syndrome living in Islamabad, Pakistan.

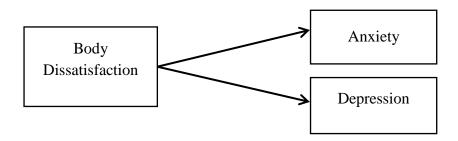
## **HYPOTHESES:**

- H 1: There will be Body Dissatisfaction and Mental Health Problems of "Anxiety" and "Depression" among women diagnosed with polycystic ovarian syndrome.
- H 2: There will be positive correlation between "Body Dissatisfaction" and Mental Health Problems of "Anxiety" and "Depression" in women with polycystic ovarian syndrome.
- H 3: There will be positive correlation between Mental Health Problems "Anxiety" and "Depression" and "Emotion Focused Coping" among women diagnosed with polycystic ovarian syndrome.
- H 4: Coping strategies "Emotion Focused", "Problem Focused" and "Dysfunctional Coping" will be a mediator between Body Dissatisfaction and Mental Health Problems "Anxiety" and "Depression" of women diagnosed with polycystic ovarian syndrome.

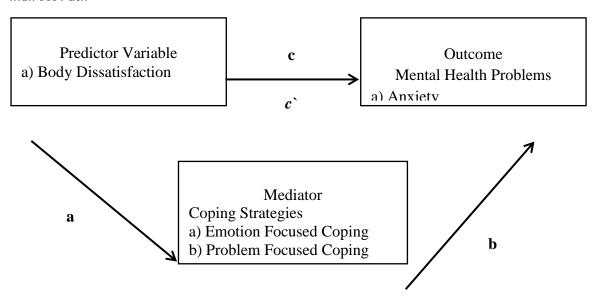
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Figure 1Conceptual model based on previous studies showing mediation of coping between body dissatisfaction and mental health problems.

Direct Path



## Indirect Path



## **METHOD:**

## Study Design:

This study followed quantitative approach and used cross sectional research design to develop the findings. The study built on correlation research design since more than two variables were in focus and highlight interlink between these variables. Additionally, this study also explores the direction between variables that enables predictions regarding variables.

## **RESEARCH PROCEDURE:**

The study population was women diagnosed with polycystic ovarian syndrome residing in Islamabad. Purposive sampling and snow ball sampling was used to collect data from 100 women residing in Islamabad diagnosed with polycystic ovarian syndrome.

## Sample Inclusion Criteria:

Females of reproductive age, Females residing in Islamabad, Diagnosed with PCOS and the participants should have the ability to read, comprehend and provide an output for efficient application of questionnaires.

Sample Exclusion Criteria:



Females experiencing PCOS symptoms but not diagnosed, Females residing in other cities, Females who are experiencing menopause symptoms and Females with other endocrine or reproductive issues besides PCOS.

## **Data Collection Tools:**

## 1. Informed Consent Form and Demographic Form:

Consent form included the study title, researcher information and research affiliation. Demographic form consist of age, education, marital status, socio economic status, height, weight and body mass index.

## 2. Body Image Acceptance and Action Questionnaire (BIAAQ):

The questionnaire is a twelve item scale using the seven point likert strategy to rate responses. The items on this BIAAQ are measured through reverse scoring "Individuals who are less psychologically flexible tend to have high levels of body image dissatisfaction". (Sandoz et al., 2013; Webb, 2015).

## 3. Mental Health Inventory:

The 18 item mental health inventory is a shorter version of the original 38 item (Veit & Ware, 1983). The purpose of this scale was to assess psychological distress and wellbeing in general population. This inventory has 18 items and can assess 4 subscales of emotional status; "Anxiety", "Depression", "Behavioral Control", and "Positive Affect". It follows a six point likert scale. For each item there are six responses scored as follows "all of the time = 1", "most of the time = 2", "a good bit of the time = 3", "some of the time = 4", "a little of the time = 5", "none of the time = 6". The overall reliability of the 18 item mental health inventory scale is 0.93. The subscale and total scores range from 0 - 100, with higher scores indicate better mental health (Yuvraj et al., 2016).

## 4. Brief COPE Inventory:

For this study 28 item brief form will be used which was originally developed as a sixty item inventory by Carver in the year 1989. It follows a four point likert scale: "ranging from 1 = I usually do not do this at all to 4 = I usually do this a lot". The internal consistency of the tool was tested on student sample and it resulted in a range of 0.62 and 0.92, the test retest reliability coefficient ranged between 0.46 and 0.86 (Carver, 1989).

## Data Analysis:

Statistics package for social sciences version 29 was used to analyze the data and generate elaborate results. Descriptive analysis was used to assess "age", "marital status", "socio economic status" and "body mass index". The analysisofcorrelation was conducted to check the strength of relationship between variables and mediation process by Hayes to explain the direction of variables (Preacher & Hayes, 2014).

## **Ethical Considerations:**

In order to conduct this research, some ethical considerations were kept in mind. Approval for this research was taken from the "Department of Psychology and Human Research and Ethics Committee ZABIST". The study process involved obtaining informed consent from the participants. This was done by briefing about the nature of this study, assuring confidentiality and the right to withdraw from the study at any time.

## **RESULTS AND ANALYSIS:**

Table 1
Table showing demographic variation in sample (N=100).

			Frequency	Percentage
Marital Status		Single	57	56.4
		Married	43	42.6
		Widow	0	0
		Divorced	0	0
		Separated	0	0
		Low Income	0	0
Socio Economic Status		Middle Income	51	50.5
		Upper Middle Income	49	48.5
		Upper Income	0	0
		Underweight	11	10.9
Pody Mass In	dov	Normal Weight	18	17.8
Body Mass Index		Overweight	55	54.5
		Obesity	16	15.8
Minimum Maximum Age Age		Age Categories		
20	45	Young Adulthood	92	91.1
20	45	Middle Adulthood	8	7.9

In this study, an analysis of the frequency distribution of demographics was conducted to gain a better understanding of the characteristics of the sample population. The demographic variables examined included age, socio economic status, marital status and body mass index classification. Regarding age the frequency distributing revealed the youngest participant to be 20 and oldest to be 45. For further analysis of the study variables data regarding age was divided into two groups following the categories of human development given in the psychosocial theory (Erikson, 1980). This category summarized the data into two categories of young adulthood 19 - 40 and middle adulthood 45 - 65. Young adults were calculated to be 92 and middle adults were 8. This shows that the data was diverse since it accurately represents women of reproductive age. Data regarding marital status shows a significantly large number of single women gave responses whereas married women were second highest. Divorced and widow was also included in the demographic category but the sample did not have any participants for this category. Similarly, socio economic status shows more participants belonged to middle income and then upper middle income.

Data regarding participant's height and weight was also but to avoid data over load participant's body mass index was used for further analysis. The standard categorization of body mass index was applied to produce groups. Body mass index less than 18.5 was grouped as underweight, body mass index between 18.5 - 25 represents normal weight, body mass index between 25 - 30 is grouped as overweight whereas body mass index above 30 is grouped as obesity.

Overall, the frequency distribution of demographics provides a comprehensive overview of the sample composition. The diverse representation across age, socio economic status, marital status and body mass index allows for a more nuanced understanding of the population characteristics. These findings contribute to the validity and generalizability of the study results, as they reflect a broader range of perspectives and experiences within the targeted population.



Table 2Table showing common clinical symptoms among women with PCOS (N=100).

PCOS Clinical Symptoms (NHS, 2017)	Frequency	Percentage
* A disruption in a woman's menstruation cycle that indicates the ovaries are not releasing eggs regularly.	70	69.3
* Polycystic ovarian syndrome also include a high level of androgen, commonly known as the male hormone.	17	16.8
* Out of proportion physical appearance which can include excessive facial and body hair and weight gain.	87	86.1

Table 3Table showing two tailed Pearson correlation analysis of the study variables (N=100).

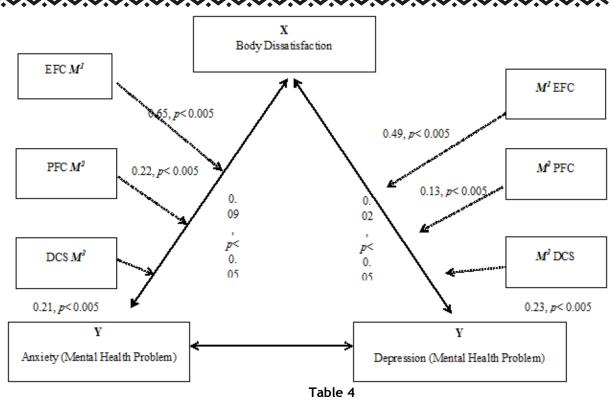
Variables	Anxiety	Depression	MHI	EFC	PFC	DCS
Body Dissatisfaction	.213 <sup>*</sup>	.240 <sup>*</sup>	.353**	026	.063	133
Anxiety	-	.785 <sup>**</sup>	.845**	.171**	.187	085
Depression		-	.811 <sup>**</sup>	.161	.088	090
Over all MHI Score			-	.188	.170	123
Emotion Focused Coping				-	.725**	.652 <sup>**</sup>
Problem Focused Coping					-	.555 <sup>**</sup>
Dysfunctional Coping						-

<sup>\*.</sup> Correlation is significant at the 0.05 level (2-tailed). \*\*. Correlation is significant at the 0.01 level (2-tailed)

Note: MHI=Mental Health Inventory, EFC=Emotion Focused Coping, PFC=Problem Focused Coping, DCS=Dysfunctional Coping Strategies.

Table 3 shows a strong correlation among all the variables used in this study. Body dissatisfaction is negatively correlated with the variables of emotion focused coping and dysfunctional coping strategies. The variable of dysfunctional coping strategies is negatively correlated with anxiety (mental health subscale) and depression (mental health subscale).

**Figure 2**Statistical model based on numeric analysis showing mediation of coping between body dissatisfaction and mental health problems.



## 4.1 Mediation Analysis

Table showing mediation of Emotion Focused Coping, Problem Focused Coping and Dysfunctional Coping between Body Dissatisfaction and Anxiety (N=100).

## 4.1.1. Direct effect of body dissatisfaction on anxiety.

Total Effect of X on Y

Effect	SE	t	P	)	LLCI	ULCI
0.2496	0.1151	2.1678	C	).03*	0.0211	0.4781
Direct Effect	t					
Pathway	Direct Effect	SE	t	Р	LLCI	ULCI
X <b>→</b> Y	0.1934	0.1137	1.7013	0.09*	- 0.0323	0.4190

\*P>0.05

## 4.1.2. Indirect effect through coping strategies mediation.

## Indirect Effect

Pathway (Mediation)	Indirect Effect	BootSE	BootLLCI	BootULCI	Р
M1 EFC	- 0.0077	0.0447	- 0.1096	0.0808	0.0791*
M2 PFC	0.0122	0.0330	- 0.0432	0.0936	0.2533
M3 DCS	- 0.0517	0.0462	- 0.0261	0.1571	0.0121*

\*P>0.05

Note: EFC=Emotion Focused Coping, PFC=Problem Focused Coping, DCS=Dysfunctional Coping Strategies.

In the mediation analysis, coping mechanisms (problem-focused, emotion-focused, and dysfunctional coping) were looked at in connection to (Y) anxiety and (X) body dissatisfaction. The findings demonstrated that there was a substantial direct association between body dissatisfaction and anxiety, even if coping mechanisms only partially mitigated this relationship. This suggests that while there are other factors at work in the relationship between the two variables, coping mechanisms do play a partial role. It is crucial to take into account the analysis's constraints, such as its application to different populations. Overall, the results show the importance of coping

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mechanisms in this connection and give light on the mechanisms behind how body dissatisfaction affects

anxiety.

## 4.2 Mediation Analysis

Table showing mediation of coping Emotion Focused Coping, Problem Focused Coping and Dysfunctional Coping between Body Dissatisfaction and Depression (N=100).

## 4.2.1. Direct effect of body dissatisfaction on depression.

Total Effect of X on Y

Effect	SE	t	Р		LLCI	ULCI		
0.3075	0.1249	2.4615	0.01*		0.0596	0.5554		
Direct Eff	Direct Effect							
Pathway	Direct Effect	SE	t	Р	LLCI	ULCI		
$X \rightarrow Y$	0.2743	0.1244	2.2050	0.02*	0.0273	0.5214		

<sup>\*</sup>P>0.05

## 4.2.2. Indirect effect through coping strategies mediation.

#### Indirect Effect

Pathway (Mediation)	Indirect Effect	BootSE	BootLLCI	BootULCI	Р
M1 EFC	- 0.0121	0.0618	- 0.1332	0.1254	0.0131*
M2 PFC	- 0.0040	0.0301	- 0.0763	0.0542	0.7333
M3 DCS	0.0492	0.0457	- 0.0271	0.1542	0.0287*

<sup>\*</sup>P>0.05

Note: EFC=Emotion Focused Coping, PFC=Problem Focused Coping, DCS=Dysfunctional Coping Strategies.

The goal of the mediation analysis was to determine if coping techniques (M1: emotion focused coping, M2: problem focused coping, and M3: dysfunctional coping) may have a mediating role in the link between depression (Y) and body dissatisfaction (X). The research evaluated both direct and indirect effects to see if the influence of X on Y is partially or completely mediated by M.Through M2 (problem focused coping), the results demonstrated a considerable indirect influence of X on Y, whereas M1 (emotion focused coping) and M3 (dysfunctional coping) also exhibited some indirect effects. This shows that M1 and M3 partially mediated the X-Y connection. The indirect effect's significance was supported by the 95% confidence interval. However, the direct impact of X on Y persisted as a substantial effect even after adjusting for the mediator variable. This suggests that X and Y have a direct link that is not mediated by M. According to the direct effect, X may have a special impact on Y that the mediator is unable to completely account for.

In conclusion, as M1 and M3 are responsible for a sizable proportion of the X-Y connection, the results point to partial mediation by these two variables. Nevertheless, the mediation cannot account for a sizable direct influence between X and Y. The specific sample that was employed in the study, as well as the assumptions and restrictions of mediation analysis, must all be taken into account. Overall, the findings provide insights into the underlying processes by which X impacts Y and emphasize the mediator M's role in this connection, highlighting both a strong indirect effect and a considerable direct effect.

## **DISCUSSION:**

The purpose of study was to investigate how coping strategies can mediate between body dissatisfaction and mental health problems among women diagnosed with polycystic ovarian syndrome. The variable of mental health was divided into two categories of "Anxiety" and "Depression" for significant results. The study was designed with the intention to explore the role of coping strategies used by women diagnosed with polycystic ovarian syndrome. These coping strategies were categorized according to three variable model for analysis purpose. The three model variable was given by Cooper et al., (2006). These categories facilitated organizing brief

cope inventory subscale responses obtained from women diagnoses with polycystic ovarian syndrome. The fourteen scales of brief cope inventory were classified into three broad categories; "Emotion Focused Strategies" (Use of emotional support, Positive reframing, Acceptance, Religion and Humor), "Problem Focused Strategies" (Active coping, Planning and Use of instrumental support) and "Dysfunctional Coping Strategies" (Venting, Denial, Substance use, Behavioral disengagement, Self-distraction and Self-blame).

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To fulfil the purpose of this study, the research used questionnaires. These questionnaires were standardized and the data was collected within the region of Islamabad. The participants were between the age group of 18+ women living with polycystic ovarian syndrome. Therefore, the demographics were designed to produce viable and diverse data. To support the first and second hypotheses i.e. H1: There will be body dissatisfaction and mental health problems "Anxiety" and "Depression" among women diagnosed with polycystic ovarian syndrome and H2: There will be positive correlation between body dissatisfaction and mental health problems (Anxiety and Depression) in women with polycystic ovarian syndrome. The correlation analysis among the variables of "Body Dissatisfaction", "Anxiety", "Depression", "Emotion Focused Coping", "Problem Focused Coping" and "Dysfunctional Coping"; with reference to table 3 shows that the variable of body dissatisfaction and mental health problems exist among women diagnosed with polycystic ovarian syndrome. However, to further elaborate the mental health problems linked with body dissatisfaction correlation analysis shows that there is positive correlation between body dissatisfaction and anxiety (+.213) and depression (+.240). Researches have highlighted body dissatisfaction as a risk factor in the prevalence of various adverse psychological concerns which primarily include eating disorder (Ferrari et al., 2013) and depression or for some depression like symptoms (Petroski et al., 2012).

The analysis to address the second research question shows that there is significant correlation between body dissatisfaction and mental health problems of anxiety and depression elaborated in table 3. To support the third hypothesis i.e., there will be positive correlation between mental health problems "Anxiety" and "Depression" and "Emotion Focused Coping" among women diagnosed with polycystic ovarian syndrome. The results show that there is an overall positive correlation between emotion focused coping and mental health problems of anxiety (+.171\*\*) and depression (+.161) which suggests that women practicing emotion focused coping will have a higher score on the mental health subscales. The positive correlation correlation may be due to numerous factors. As suggested by previous studies that emotion focused coping is a maladaptive strategy and is directly linked with depression and anxiety which results in deterioration in quality of life (Folkman & Lazarus, 1988). Where problem focused coping can enhance psychosocial wellbeing (Lechner et al., 2007). Whereas, dysfunctional coping is negatively correlated with mental health subscales which may indicate that the participants do not indulge in dysfunctional coping or the statements of the scale were not relatable for example items regarding substance use.

To address the fourth hypothesis i.e. coping strategies "Emotion Focused", "Problem Focused" and "Dysfunctional Coping" will be a mediator between Body Dissatisfaction and mental health problems of "Anxiety" and "Depression" of women diagnosed with polycystic ovarian syndrome. To test the hypothesis mediation analysis was conducted between body dissatisfaction and mental health problems of "Anxiety" and "Depression". Whereas, the three coping categories; "Emotion Focused", "Problem Focused" and "Dysfunctional Coping" was analyzed separately as mediating variables. The results of the mediation analysis revealed a significant but low indirect effect of body dissatisfaction on anxiety through the mediator variable emotion focused coping whereas problem focused coping and dysfunctional coping have some indirect effect. This suggests that the presence of problem focused coping and dysfunctional coping partially mediates the relationship between body dissatisfaction and anxiety. These findings provide insights into the underlying mechanisms and pathways through which body dissatisfaction influences mental health problems of anxiety and highlight the role of the mediator in this relationship. Some studies have explored personality traits of women with polycystic ovarian syndrome and they reported that women with

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polycystic ovarian syndrome have anxious and depressive traits (Ozcan Dag et al., 2015; Cesta et al., 2017; Scaruffi et al., 2019; Urban et al., 2022).

Similarly, to further test hypothesis four a second mediation analysis was conducted to examine the potential mediating role of the mediator variables of "Emotion Focused Coping", "Problem Focused Coping" and "Dysfunctional Coping" in the relationship between body dissatisfaction and depression. The analysis aimed to determine if the effect of body dissatisfaction on depression is partially or fully mediated, and to assess the direct and indirect effects. The results of the second mediation analysis revealed a significant low indirect effect of body dissatisfaction on mental health problem of depression through the mediator variable "Problem Focused Coping" whereas "Emotion Focused Coping" and "Dysfunctional Coping" have some indirect effect. This suggests that the application of emotion focused coping strategy and dysfunctional coping strategy partially mediates the relationship between body dissatisfaction and depression. These findings are backed by previous study; A research was conducted at the "Kayseri Education and Research Hospital of Medicine" in the year 2013. The research aimed to unravel which symptoms of PCOS increased the mental health problems such as "Depression", "Anxiety", "Low Self Esteem and Social Worry". The study classified polycystic ovarian syndrome according to symptoms and the aim was to help promote the treatment variations for "polycystic ovarian syndrome" by exploring how much changes in quality of life affects the patients. The results of this study suggested that it was "infertility group" whose "beck depression inventory" score was the highest (Acmaz et al., 2013).

The research findings will increase the awareness regarding mental health problems associated with fertility issues among women. Since, the research covers body dissatisfaction which means awareness campaigns can be designed to convey knowledge regarding these bodily changes experienced by women diagnosed with polycystic ovarian syndrome. This study also highlights the significance of including counseling in care plan for polycystic ovarian syndrome in Pakistan. The study's effort to explore the factor of coping through body dissatisfaction can contribute to advancing research in psychology specifically regarding female mental health, body image issues and effective coping strategies. The findings from this research can be used to further elaborate on the factors that cause mental health problems. Public awareness campaigns and educational programs can use the findings of this study to produce well curated campaigns and promote importance of women's mental health.

## Limitations:

- The questionnaires could have impacted the participant's attention span causing lethargy effect to influence the responses since three survey forms were used.
- The sample was collected from one city it is not generalizable for the Pakistani females. For future studies samples could be collected from various cities to accurately represent female population.

#### Conclusion:

This study concludes that polycystic ovarian syndrome does indeed cause body dissatisfaction which further leads to mental health problems. Therefore, this study can be interpreted as showing that women diagnosed with polycystic ovarian syndrome experience body dissatisfaction which causes them to feel anxious and depressed and hence they choose various coping strategies between emotion focused, problem focused and dysfunctional coping.

## **ACKNOWLEDGEMENTS:**

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## **CONFLICT OF INTEREST:**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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