



ASSESSMENT OF ANXIETY, STRESS AND DEPRESSION IN WOMEN WITH AND WITHOUT PCOS: A COMPARITIVE STUDY.

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Abstract: The prevalence of depression among PCOS women is high and varies from 28% to 64% and Anxiety is another disturbance in PCOS suffering women, varies from 34% to 57%. PCOS is mainly diagnosed based on presence of atleast two out of three diagnostic criteria, such as ovulatory dysfunction, hyperandrogenism (clinical or biochemical), and polycystic ovaries as identified by ultrasound.

Methodology:

This is a cross sectional survey which involved 100 responses from age group 18-28. The main aim of this study is to assess the levels of anxiety, stress, depression among PCOS and Non PCOS. Pain during periods was assessed using DVPRS 2.0 and mood was assessed using mood analysis scale. DASS 21 scale was used to assess the anxiety, depression, stress.

Results and discussion:

In the present study, a total of 100 responses were recorded in which 30 responses were from PCOS affected individuals and 70 were from non PCOS individuals. 46.6% of PCOS individuals has normal, 6.6% has mild, 33.3% has moderate 10% has severe, 3.3% has extremely severe levels of anxiety. In PCOS individuals, 73.3% has normal, 20% has mild, and 6.6% has moderate and 0 severe and extremely severe levels of stress. 56.6% has normal, 33.3% has mild, 10% has moderate, 0 severe and extremely severe levels of depression. The levels of anxiety, depression, and stress were higher for PCOS individuals compared to Non PCOS individuals

Conclusion:

Mental health is of utmost importance in young women with or without PCOS. It is important to educate young women on necessity of physical activity and healthy diet in young women. The levels of anxiety, stress and depression are high in women with PCOS. Assessment of mental health in women with PCOS is crucial.

KEYWORDS:

PCOS, Anxiety, Depression, Stress, Mental health.

I. INTRODUCTION

Polycystic ovarian syndrome [PCOS] is a genetically complex endocrine disorder^[1] and it is one of the most common disorder interrupting the homeostasis of the female endocrine system.^[2] PCOS is considered as common endocrine disorder as it affects 5-10 % of women at their reproductive age.^[3] PCOS is a chronic condition leads to occurrence of many relevant factors such as fear of infertility, obesity and its metabolic complications and finally unfeminine, unattractive appearance due to hirsutism, acne or alopecia. PCOS begins at adolescent age and affects the quality of life of individuals. Signs and symptoms in adolescents are similar to adult women like excessive weight, clinical hyperandrogenism, menstrual disturbances and infertility. PCOS is a common cause of infertility and chronic anovulation^[4].

These disturbing symptoms lead to cause of psychological disturbances, impaired sexual functioning, depression and marital and social mal-adjustments. The prevalence of depression among PCOS women is high and varies from 28% to 64% and Anxiety is another disturbance in PCOS suffering women, varies from 34% to 57%. there are many reasons leads to high prevalence of depression and anxiety in women with PCOS but the main factor for psychological disturbances is physical symptoms experienced by PCOS women^[5].

PCOS is a most common endocrine disorder affecting nearly 5-10% of women in western countries. The Indian fertility society reported prevalence of 3.7% -22.5% in India. Higher rates of anxiety and depression are experienced in women with PCOS than women in general population^[6].

PCOS is mainly diagnosed based on presence of atleast two out of three diagnostic criteria, such as ovulatory dysfunction, hyperandrogenism (clinical or biochemical), and polycystic ovaries as identified by ultrasound. PCOS women has higher risk of

cardio-metabolic complications like obesity, insulin resistance, type 2 diabetes, hypertension, non-alcoholic fatty liver disease, obstructive sleep apnoea^[7].

The U.S. Defense and Veterans Pain Rating Scale (DVPRS 2.0) is a pain assessment tool that utilizes a numerical rating scale which uses functional word descriptors, color coding, and pictorial facial expressions matched to pain levels. The DVPRS 2.0 consists of a basic traffic-light color code. Green color Represents mild pain with a scale ranging from 0-4, Yellow Represents moderate pain with a scale ranging from 5-6, Red represents severe pain with a scale ranging from 7-10^[8]. Mood during periods was assessed using the mood analysis scale which included 2 domains i.e. positive moods relaxed, happy, and joyful and negative moods angry, anxious, sad, confused, and indifferent^[9].

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) are a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder^[10].

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
mild	10-13	8-9	15-18
moderate	14-20	10-14	19-25
severe	21-27	15-19	26-33
Extremely severe	28+	20+	34+

METHODOLOGY:

This is a cross sectional survey which involved 100 responses from age group 18-28. A questionnaire was prepared and circulated among young women. The main aim of this study is to assess the levels of anxiety, stress, depression among PCOS and Non PCOS. Primary objectives of this study are to assess the general symptoms, diet and physical exercise, mood during periods, symptoms during periods, to assess the severity of pain during periods, to assess the influence of mental health on career or life style in PCOS and Non PCOS individuals. Pain during periods was assessed using DVPRS 2.0 and mood was assessed using mood analysis scale. DASS 21 scale was used to assess the anxiety, depression, stress.

RESULTS:

A total of 100 responses were recorded and 30 responses were given by PCOS affected individuals.

AGE	No of individuals
18	1
19	3
20	3
21	2
22	3
23	11
24	4
26	1
27	1
28	1

Treatment	No of individuals	%
Allopathy	18	60
Homeopathy	5	16.6
Naturopathy	1	3.3
other	6	20

Age of diagnosis	No of individuals	%
teenage	21	70
Lockdown (2020-2021)	9	30

TABLE 4: GENERAL SYMPTOMS OF INDIVIDUALS

	AC NE	%	WEG HT GAIN	%	UNW ANTE D HAIR	%	HAI R FAL L	%	IRREG ULAR MENSE S	%	AN Y OF TH E TW O	%	AN Y OF TH E TH RE E	%	AN Y OF THE FOU R	%	A LL	%	NO NE	%
PCOS	0	0	1	3.3	0	0	0	0	3	10	5	16.6	9	30	4	13	8	26	0	0
NON PCOS	12	17	2	2.8	1	1.4	20	28.5	2	2.8	15	21.4	4	5.7	6	8.5	4	5.7	4	5.7
TOT AL	12	12	3	3	1	1	20	20	5	5	20	20	13	13	10	10	12	12	4	4

TABLE 5: HEALTHY DIET AND PHYSICAL EXERCISE IN PCOS VERSUS NON PCOS

	PCOS	%	NON PCOS	%
HEALTHY DIET	18	60	37	52.8
PHYSICAL EXERCISE	17	56.6	25	35.7

TABLE 6: MOOD DURING PERIODS IN PCOS AND NON PCOS INDIVIDUALS

MOOD	PCOS	%	NON PCOS	%	TOTAL	%
JOYFUL	0	0	0	0	0	0
HAPPY	2	6.6	3	4.2	5	5
RELAXED	0	0	8	11.4	8	8
INDIFFERENT	4	13.3	16	22.8	20	20
CONFUSED	3	10	7	10	10	10
SAD	5	16.6	7	10	12	12
ANXIOUS	1	3.3	5	7.1	6	6
ANGRY	6	20	11	15.7	17	17
RELAXED, ANGRY	1	3.3	0	0	1	1
INDIFFERENT, SAD	1	3.3	0	0	1	1
CONFUSED, ANGRY	0	0	1	1.4	1	1
INDIFFERENT, ANGRY	0	0	1	1.4	1	1
SAD, ANGRY	1	3.3	2	2.8	3	3
INDIFFERENT, CONFUSED, ANGRY	0	0	1	1.4	1	1
CONFUSED, SAD, ANGRY	1	3.3	0	0	1	1
CONFUSED, SAD, ANXIOUS	1	3.3	1	1.4	1	1
JOYFUL, INDIFFERENT, SAD, ANGRY	1	3.3	0	0	1	1
INDIFFERENT, SAD, ANGRY, ANXIOUS	0	0	1	1.4	1	1
CONFUSED, SAD, ANXIOUS, ANGRY	0	0	2	2.8	2	2
CONFUSED, HAPPY, ANGRY, SAD	0	0	1	1.4	1	1
RELAXED, SAD, ANXIOUS, ANGRY	0	0	0	0	1	1
INDIFFERENT, CONFUSED, SAD, ANGRY	1	3.3	0	0	1	1
INDIFFERENT, CONFUSED, SAD, ANXIOUS, ANGRY	2	6.6	1	1.4	3	3

ALL	0	0	2	2.8	2	2
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LEVEL OF SEVERITY	PCOS	%	NON PCOS	%	TOTAL	%
NO PAIN	1	3.3	4	5.17	5	5
MILD	5	16.6	11	15.7	16	16
MODERATE	12	40	32	45.7	44	44
SEVERE	7	23.3	15	21.4	22	22
WORST	5	16.6	8	11.4	13	13

	BAC K PAIN	NAUSEA , VOMITINGS	BREAST TENDERN ESS	BLOATI NG	CALF MUSC LE PAIN	STOMA CH PAIN	CRAMP S	OTH ERS	T W O	T H R E E	F O U R	F I V E	AL L
PCOS	5	0	1	1	1	3	2	0	3	7	5	2	0
NON PCOS	27	0	1	1	0	13	12	1	5	2	4	3	1
TOT AL	32	0	2	2	1	16	14	1	8	7	9	5	1

		Normal	%	Mild	%	Moderate	%	Severe	%	Extremely severe	%
PCOS	Anxiety	14	46.6	2	6.6	10	33.3	3	10	1	3.3
	Stress	22	73.3	6	20	2	6.6	0	0	0	0
	Depression	17	56.6	10	33.3	3	10	0	0	0	0
NON PCOS	Anxiety	38	54.2	10	14.2	14	20	6	8.5	3	4.2
	Stress	52	74.2	13	18.5	5	7.1	0	0	0	0
	Depression	49	70	10	14.2	11	15.7	0	0	0	0

	YES	%	NO	%
PCOS	23	76.6	7	23.3
NON PCOS	52	74.2	18	25.7
TOTAL	75	75	25	25

DISCUSSION:

In the present study, a total of 100 responses were recorded in which 30 responses were from PCOS affected individuals and 70 were from non PCOS individuals. 11 out of 30 responses from PCOS individuals belonged to 23 years of age. 18 out of 30 PCOS individuals have undergone allopathy for treating PCOS. 21 out of 30 Individuals were diagnosed with PCOS during their teenage and rest of them was diagnosed during lock down which might be due to decrease in physical activity. To begin with, General symptoms of patients included acne, weight gain, unwanted hair, hair fall, and irregular menses. 30% of PCOS individuals had any of the three symptoms and 28.5% of NON PCOS individuals had hair fall followed by 21.4% with any of the two symptoms. 60% of the PCOS individuals follow healthy diet and 56.6% follows physical exercises regularly. 52.8% of NON PCOS individuals follow healthy diet and 35.7% follows physical exercise regularly. 20% of the PCOS individuals feel angry during periods and 22.8% of the NON PCOS individuals feel indifferent during periods. 40% of PCOS and 45.7% of NON PCOS individuals feel moderate pain during periods. However, 16.6% of PCOS and 11.4% of NON PCOS individuals experience worst pain during periods. Symptoms during periods included back pain, nausea, vomiting, breast tenderness, bloating, calf muscle pain, stomach pain, cramps and others. 7 out of 30 PCOS individuals experience any 3 of the symptoms during periods and 27 out of 70 Non PCOS individuals experience backpain during periods.

46.6% of PCOS individuals has normal, 6.6% has mild, 33.3% has moderate 10% has severe, 3.3% has extremely severe levels of anxiety. Whereas in NON PCOS individuals 54.2% have normal, 14.2% has mild, 20% has moderate, 8.5% has severe, and 4.2% has extremely severe levels of anxiety. In PCOS individuals, 73.3% has normal, 20% has mild, and 6.6% has moderate and 0 severe and extremely severe levels of stress. However, in NON PCOS individuals 74.2% has normal, 18.5% has mild, 7.1% has moderate, 0 severe and extremely severe levels of anxiety. In PCOS individuals, 56.6% has normal, 33.3% has mild, 10% has

moderate, 0 severe and extremely severe levels of depression. In NON PCOS individuals, 70% has normal, 14.2% has mild, 15.7% has moderate, 0 severe and extremely severe levels of depression. The levels of anxiety, depression, and stress were higher for PCOS individuals compared to Non PCOS individuals. This is similar to the study conducted by Anna L. Damone, Anju E. Joham, Deborah Loxton, Arul Earnest, Helena J. Teede and Lisa J. Moran which stated that Compared with women without PCOS, women with PCOS have increased depression, anxiety and perceived stress^[11]. However, the levels were moderate expect for anxiety both in PCOS and Non PCOS where 3 has severe and 1 has extremely severe levels of anxiety in PCOS and 6 has severe and 3 has extremely severe levels of anxiety in Non PCOS individuals. The similarity in the levels might be due to influence of other factors like education, career, lifestyle. 76.6% of the PCOS individuals and 74.2% of Non PCOS individuals think that their mental health is affecting their studies/career.

CONCLUSION:

Mental health is of utmost importance in young women with or without PCOS. It is important to educate young women on necessity of physical activity and healthy diet in young women. The levels of anxiety, stress and depression are high in women with PCOS. Assessment of mental health in women with PCOS is crucial. Further research must be undertaken to evaluate the need of therapy in PCOS women with mental health issues. As our study has shown that the mental health of women without PCOS is also being affected. Therefore, It is necessary to spread awareness of mental health among young women with or without PCOS.

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REFERENCES:

1. Maha AH Sulaiman, Yahya M Al-Farsi, Maha M Al-Khaduri, Mostafa I Waly, Jumana Saleh and Samir Al-Adawi; Psychological burden among women with polycystic ovarian syndrome in Oman: a case-control study; *Int J Womens Health*. 2017; 9: 897-904.
2. Manizheh Sayyah-Melli et al. ; Psychosocial Factors Associated with Polycystic Ovary Syndrome: a Case Control Study; *J Caring Sci*. 2015 Sep; 4(3): 225-231.
3. Ghada Khafagy, Inas El Sayed, Shima Abbas, and Saeed Soliman; Perceived Stress Scale Among Adolescents with Polycystic Ovary Syndrome; *Int J Womens Health*. 2020; 12: 1253-1258.
4. Zachurzok A, Pasztak-Opilka A, Gawlik AM. Depression, anxiety and self-esteem in adolescent girls with polycystic ovary syndrome. *Ginekologia Polska*. 2021;92,6:399-405.
5. Podfigurna-Stopa A, Luisi S, Regini C, Katulski K, Centini G, Meczekalski B, Petraglia F. Mood disorders and quality of life in polycystic ovary syndrome. *Gynecol Endocrinol*. 2015 Jun;31(6):431-4.
6. Dr Sukhbir Pal Kaur, Dr Susmita Sharma, Dr Gagan Lata, Dr Sunita Manchanda; Prevalence of Anxiety, Depression and Eating Disorders in Women with Polycystic Ovarian Syndrome in North Indian Population of Haryana; *Galore International Journal of Health Sciences and Research*; 2019;4(4):2456-9321.
7. Tracy Williams, Rami Mortada, Samuel Porter; Diagnosis and treatment of polycystic ovary syndrome; *American family physician* ;2016 Jul 15;94(2):106-113
8. <https://www.disabled-world.com/health/pain/dvprs-2.php>
9. Gilson, Aaron & Dodds, Debby & Kaur, Arveen & Potteiger, Michael & Ford, James. (2019). Using Computer Tablets to Improve Moods for Older Adults with Dementia and Interactions with their Caregivers (Preprint). *JMIR Formative Research*. 3. 10.2196/14530.
10. Lovibond, S.H. & Lovibond, P.F. (1995). *Manual for the Depression Anxiety & Stress Scales*. (2nd Ed.) Sydney: Psychology Foundation
11. Damone AL, Joham AE, Loxton D, Earnest A, Teede HJ, Moran LJ. Depression, anxiety and perceived stress in women with and without PCOS: a community-based study. *Psychol Med*. 2019 Jul;49(9):1510-1520.