CODEN [USA]: IAJPBB **ISSN: 2349-7750**

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
http://doi.org/10.5281/zenodo.2563116

Available online at: http://www.iajps.com ***Research Article***

PREVALENCE OF PSYCHIATRIC DISORDERS IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME IN BURAYDAH: A CROSS-SECTIONAL STUDY

[1]Maha Sulaiman AlGazlan, [2]Modhi Hamad AlAwadh, [3]Marwa Moslih Alaloi, [4]Fatemah Saleh AlTheyab, [5]Dr. Shahida Syed Shahid, [6]Dr Mansour Mathna AlHarbi.

[1]. Qassim University, medical intern
[2]. Qassim University, medical intern
[3]. Qassim University, medical intern
[4]. Qassim University , medical intern
[5]. Maternal and Children Hospital in Buraydah, consultant in obstetrics and gynecology in Maternity and Children Hospital in Buraydah
[6]. Qassim University, consultant, Department of psychiatry, college of medicine, Qassim University

Abstract:
Background: *Polycystic ovary syndrome [PCOS] is a common endocrine disorder affecting women in their reproductive age and is characterized by both gynecological and endocrine symptoms. It can lead to a disturbance in psychological health, thus decreasing health-related quality of life.*
Objective: Our aim is to estimate the prevalence of psychiatric disorders among women diagnosed with PCOS in Qassim region.
Method: *This is a hospital-based cross-sectional study involving 198 patients of PCOS, who attended OB-GYN outpatient clinics at MCH in Buraydah from March to June 2018. The Arabic version of Patient Health Questionnaire [PHQ-9], based on Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition [DSM-V] criteria, was used to assess Psychiatric disorders among PCOS patients.*
Results: *Of the 198 patients with PCOS, 139 [70.2%] experienced one or more psychiatric disorders. Almost two-thirds [63.1%] of patients had Generalized Anxiety Disorder with different degrees. A quarter [25.8%] of patients had depression. 23 [11.6%] of patients had panic disorder. 11 [5.6%] had Anorexia Nervosa and 18 [9.1%] from Bulimia Nervosa.*
Conclusion: *About 70 % of PCOS patients presented with at least one psychiatric disorder. Therefore, we encourage a psychiatric evaluation for patients with PCOS in order to detect and treat the psychiatric disorders early.*

Corresponding author:
Maha Sulaiman Algazlan,
E-mail: mahasalga@gmail.com

QR code

Please cite this article in press Maha Sulaiman Algazlan et al., ***Prevalence Of Psychiatric Disorders In Patients With Polycystic Ovary Syndrome In Buraydah: A Cross-Sectional Study.,*** *Indo Am. J. P. Sci, 2019; 06[02].*

INTRODUCTION:

Polycystic ovary syndrome [PCOS] is considered one of the most common reproductive endocrine disorders. It is estimated that 5-10% of women of reproductive age are diagnosed with PCOS.[1] This condition presents as a complex of both endocrine and metabolic disorders. The main features include menstrual irregularity, biochemical or clinical hyperandrogenism, and ultrasound appearance of polycystic ovaries.[2] PCOS can be manifested by oligomenorrhea or amenorrhea, hirsutism and/or acne, infertility, and obesity. Although not all of those symptoms must be present in each patient. If evident, they can lead to a number of psychological problems for women with PCOS.[3,4,5,6] It has been indicated that there is a higher prevalence of psychiatric disorders especially mood disorders in patients with PCOS.[7] Several studies have confirmed that PCOS is clearly associated with depression, anxiety, and binge eating disorder, and health-related quality of life [HRQoL].[3,4,5,6] The prevalence of depression in women with PCOS is high and varies from 28 to 64%.[8-10] The prevalence of anxiety in women with PCOS ranges from 34% [10] to 57% [11]. Also, It has been found that women with PCOS might be at an increased risk of eating disorders given the tendency for obesity in PCOS.[12]

Numerous studies have evaluated the Prevalence of psychiatric disorder among PCOS patients. An internet-based survey has been conducted among Garmin female with PCOS, which involved 448 women by using Hospital Anxiety and Depression Scale [HADS]. Its aim was to assess the presence and severity of anxious and depressive symptoms rather than to distinguish between different types of anxiety or depression. And quality of life [SF-12] for assessment demonstrated that 34% [n =153] of PCOS show elevated HADS anxiety scores and 20% [n=92] showed elevated HADS depression score while 15% of them had co-morbid anxiety and depression.[13] A case-control study was done among a total of 226 women with PCOS versus 85 controlled women using Beck Depression Inventory [BDI] as an instrument measuring psychological function or disturbance comprising a global score and four scales for somatic symptoms, anxiety, insomnia, social dysfunction and severe depression. After assessment, there were 64 PCOS patients [28.6%] and 4 control women [4.7%] who had scores ≥17 on the BDI indicating clinically significant depression that needs to be treated.[14]

The aim of our study is to assess the prevalence of psychiatric disorders in women diagnosed with PCOS presenting to the outpatients' department at the Maternity and Children Hospital in Buraydah. To our knowledge, this is the first study to search for prevalence of psychiatric morbidities with PCOS in women in Qassim Region.

METHODS:

The study was carried out at Maternity and Children Hospital in Buraydah, Qassim, Saudi Arabia. MCH provides specialized medical care in the field of Obstetric and Gynecology, which is not available in other hospitals in Buraydah city. All patients who are diagnosed clinically by endocrinologists or gynecologists using Rotterdam Criteria with polycystic ovary [PCOS] and who are enrolled in MCH hospital were included in this study. This is a hospital-based cross-sectional study involved 198 patients with PCOS, attending the outpatient department [OPD] of obygyne clinics from March to June 2018.

Eligibility Criteria:

Inclusion criteria included PCOS patients in reproductive age from18 to 45 years old. We excluded patients suffering from autoimmune illnesses, Hypothyroidism, major cardiovascular, liver, kidney or digestive diseases, and patients who had received oral medications [oral steroids, androgens, or antiepileptics], pregnant and lactating females, and patients with a family history of psychiatric disorder.

DATA COLLECTING TOOLS:

We evaluated the patients using Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition [DSM-V] criteria. We used a self-administered Patient Health Questionnaire, The Arabic Version, because it is a valid and reliable tool to screen for depression, anxiety, somatic, and panic disorders in a Saudi sample based on a study called, An Arabic translation, reliability, and validation of Patient Health Questionnaire in a Saudi sample.[15] PHQ-9 depression test Questionnaire contains 9 questions of symptoms occurring over the last two weeks including anhedonia, depressed mood, sleep disturbance, decreased energy, appetite changes, guilt feeling, decreased concentration, moving/speaking speed changes, suicidal thoughts. GAD-7 consists of 7-items assess the severity of anxiety symptoms in the past 2 weeks. Answers were calculated as points giving different levels of severity. PHQ panic disorder contains two sections. First section has 4 questions reviewing the history and frequency of panic attacks. Second section contain 11 questions related to somatic symptoms of panic attacks. PHQ eating disorder is composed of three parts, the first part assesses binge eating, the second part assesses compensatory behavior to avoid gaining weight and the third part evaluates the frequency of these behaviors. The last question in all the four questionnaires is used to assess

daily functioning that maybe answered by not difficult at all, somewhat difficult, very difficult and extremely difficult.

Data Analysis:

All values were analyzed using software Statistical Package of Social Science [SPSS 24 for windows evaluation version]. Descriptive statistics were used to describe the sociodemographic variables. Frequencies and percentages are used to present categorical variables and means and standard deviations [SDs] are for continuous variables. Chi-square [χ^2] test was used to analyze categorical variables. $P<0.05$ was considered statistically significant.

RESULTS:

A total of 265 women took part in the study. Out of those, 8 above the age of 45 and 2 below the age of 18 were excluded as they don't match the age criteria. 32 and 7 PCOS patients were excluded because of pregnancy and breastfeeding respectively. We also excluded 15 cases diagnosed with hypothyroidism, 1 with Diabetes type 1, 1 with aortic stenosis. 1 patient taking Thiazide was excluded. Hence, data from 198 PCOS women were included. All of them denied a family history of psychiatric disorders.

The sample's mean [the standard deviation] age was 30.3 [±6.5] years. Of the 198 participants, 59 [29.8%] are married, 132 [66.7%] are single and 7 [3.5%] are divorced. Sociodemographic data are shown in Table 1.

Regarding psychiatric disorders, 139 [70.2%] suffer from one or more of psychiatric disorders and 59 [29.8%] of the patients do not have any psychiatric problem as shown in figure1. In Table 2, Almost two-thirds 125 [63.1%] of the patients suffer from GAD with different degrees. 16 [7.1%] of patients had a severe level of GAD. A quarter [25.8%] of patients had depression. 11.1% showed moderate depression and 13.1% showed a severe level of depression. 23 [11.6%] patients suffer from panic disorder. Eating disorder was the least common among the psychiatric disorder. 11 [5.6%] suffered from Anorexia Nervosa and 18 [9.1%] from Bulimia Nervosa.

As shown in Figure 2, There were 22 [11.1%] patients with depression reported that their depression has made their life very difficult [P value= 0.000]. 71 [35.9%] patients with GAD described that their Anxiety has made their life somewhat difficult and 22 [11.1%] of them mentioned that their life became very difficult [P value= 0.000]. 10 [9.3%] patients with panic disorder marked their disease as very difficult to get along with, 7 [6.5%] chose somewhat difficult [P value= 0.000].

Table 1. Social demographic details

	Number	**%**
Age [±SD]	**30.37±**	
Age Group		
18-25	50	25.3
26-30	56	28.3
31-35	43	21.7
36-40	37	18.7
41-45	12	6.1
Marital_status		
single	59	29.8
married	132	66.7
divorced	7	3.5

Table 2. Clinical Variable

	Number	%
Depression_Dx		
No depression	147	74.2
Depression	51	25.8
General anxiety disor-der		
No	73	36.9
Yes	125	63.1
Anorexia Nervosa		
Yes	11	5.6
No	187	94.4
Bulimia Nervosa		
Yes	18	9.1%
No	180	90.9%
Panic_Dx		
No	175	88.4
Yes	23	11.6

Figure1:

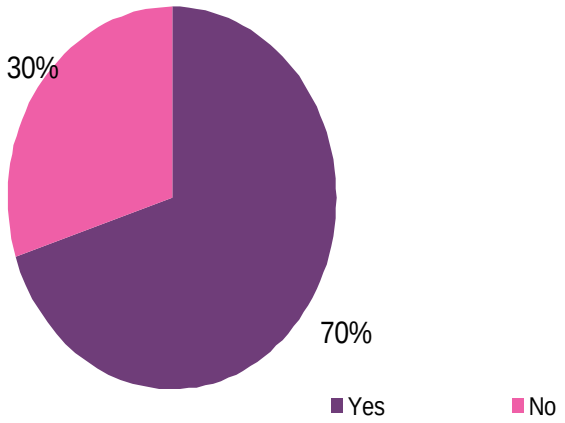
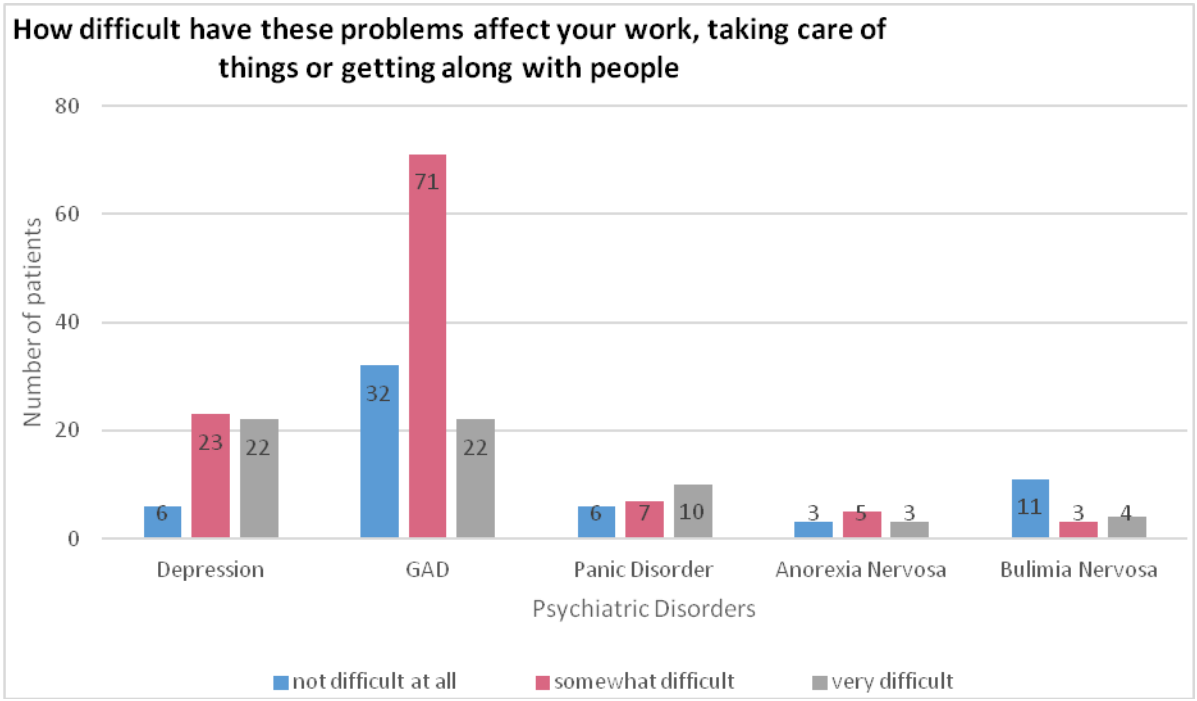


Figure 2:



DISCUSSION:

With a worldwide prevalence rate of around 6.6%, polycystic ovary syndrome [PCOS] has been reported to be the most common endocrine disorder among women of reproductive age.[1] The changes in appearance that occur among PCOS patients, particularly obesity and hirsutism, reduce physical dimensions of quality-of-life. These changes can affect the mental health of the women.[16] Another theory had been proposed which is related to the pathophysiology of PCOS. The problem in PCOS is an excessive increase in androgens hormones levels. This increase can lead to monoamine imbalance which is known to result in emotional disturbances. This may lead to

some serious conditions especially mood disorders.[17] In this study, our aim was to assess the prevalence of psychiatric disorder in PCOS patients and to assess how they subsequently affect patients' daily functioning. In a study done in Turkey [Cinar et al.], they found that around 28% of patients with PCOS were diagnosed with depression and only 4% of the control group [non-PCOS] had depression.[14] 28% was described as a very high percentage. It is nearly similar to ours, which was 25.8%. More than half of them [13.1%] had a severe level of depression. 16.7% of PCOS patients reported that life became very difficult to deal with along with depression. GAD was more prevalent among PCOS patients than depression. GAD was found in 125 patients, which means almost 2-thirds of the whole sample are with GAD. If we compared this number with the results of a study done in Germany [Benson et al.], we will find that 2-thirds is a very high number.[13] They described their GAD prevalence [34%] as a high number. Panic disorder and eating disorders were present as well. Panic disorder prevalence in our study [11.6%] was a little less than the one [15.45%] that was found in a study done in Kashmir in 2015 [Hussain et al.].[18] 11 [5.6%] of patients with PCOS are experiencing Anorexia nervosa. This number is much higher than the one in a study done in UK [Morgan et al.] which was 1.3%.[19]

To our knowledge, there is no similar study in Saudi Arabia about the relationship between psychiatric disorders and PCOS. However, there is a similar study done in Oman in 2017 [Sulaiman et al.].[17] Our results strongly support theirs especially in GAD prevalence as they found it to be in 67.3% of patients with PCOS. However, the prevalence of depression in their study [50.9%] is high compared to ours [25.8%].

It is plausible that the prevalence of psychiatric disorders is significant among PCOS patients. Clearly, PCOS reduces the quality of life. It reduces self-esteem of patients because it can lead to hirsutism and other looking-affecting problems. In our study, we excluded risk factors that might contribute to the occurrence of psychiatric disorders, such as a diagnosis of an autoimmune illness, Hypothyroidism, major cardiovascular, liver, kidney or digestive disease, and use of medications [oral steroids, androgens, or anti-epileptics], pregnant and lactating females, and a family history of psychiatric disorder. So the results show that PCOS can be an isolated precipitating factor for increasing the prevalence of Depression, GAD, Panic and Eating disorders. Therefore, we emphasize the importance of screening for Psychiatric disorders in the first follow up visits, thus treat them earlier. We encourage psychiatric referrals or involving a psychiatrist in the treating team.

This study is a cross-sectional study and limits the ability to assess the accuracy of this idea in the future whether the psychiatric prevalence or the intensity of depression and GAD increases with time in such patients. Our study could be criticized because it lacked the presence of a control group, which could have provided us a comparison for every variable. However, we are the first in our country to report such numbers for future studies to be conducted and evaluate more aspects regarding psychiatric disorders among PCOS patients.

CONCLUSION:

Psychiatric disorders showed a significant relation with PCOS. This result can be related to the changes in appearance associated with PCOS such as in hirsutism or it can be related to the mood disturbances associated with hormonal imbalance that is present in the pathogenesis of PCOS. Therefore, Screening for psychiatric disorders PCOS patients is an important part of the initial evaluation. Endocrinologist and gynecologists who treat PCOS patients should be aware of the potential presence of psychiatric disorders and should give a timely referral for the treatment of present psychiatric comorbidity.

Conflict of interest:

The authors agreed they have no conflict of interest to declare.

Acknowledgments:

We would like to express our gratitude to Maternal and Children Hospital in Buraydah for their kind cooperation. Also, we wish to thank Ms. Hanan Nasser Alrashede for her assistance with data collection.

REFERENCES :

1. Azziz R, Woods KS, Reyna R, Key TJ, Knochenhauer ES, Yildiz BO. The prevalence and features of the polycystic ovary syndrome in an unselected population. J Clin Endocrinol Metab. 2004;89:2745–9. doi: 10.1210/jc. 2003-032046.
2. Wild RA, Carmina E, Diamanti-Kandarakis E, Dokras A, Escobar-Morreale HF, Futterweit W, et al. Assessment of cardiovascular risk and prevention of cardiovascular disease in women with the polycystic ovary syndrome: A consensus statement by the Androgen Excess and Polycystic Ovary Syndrome [AE-PCOS] Society. J Clin Endocrinol Metab. 2010;95:2038–49.
3. Hung JH, Hu LY, Tsai SJ, Yang AC, Huang MW, Chen PM, et al. Risk of psychiatric disor-

ders following polycystic ovary syndrome: A nationwide population-based cohort study. PLoS One. 2014;9:e97041. doi: 10.1371/journal.pone. 0097041. [PMC free article] [PubMed]
4. Pastore LM, Patrie JT, Morris WL, Dalal P, Bray MJ. Depression symptoms and body dissatisfaction association among polycystic ovary syndrome women. J Psychosom Res. 2011;71:270–6. doi: 10.1016/j.jpsychores.2011.02.005.
5. Rassi A, Veras AB, dos Reis M, Pastore DL, Bruno LM, Bruno RV, et al. Prevalence of psychiatric disorders in patients with polycystic ovary syndrome. Compr Psychiatry. 2010;51:599–602. doi: 10.1016/j.comppsych.2010.02.009.
6. Kerchner A, Lester W, Stuart SP, Dokras A. Risk of depression and other mental health disorders in women with polycystic ovary syndrome: A longitudinal study. Fertil Steril. 2009;9:207–21. doi: 10.1016/j.fertnstert.2007.11.022.
7. Rasgon NL, Rao RC, Hwang S, Altshuler LL, Elman S, Zuckerbrow-Miller J, et al. Depression in women with polycystic ovary syndrome: Clinical and biochemical correlates. J Affect Disord. 2003;74:299–304.
8. Bhattacharya SM, Jha A: Prevalence and risk of depressive disorders in women with polycystic ovary syndrome [PCOS]. *Fertil Steril* 2010, 94: 357–359. 10.1016/j.fertnstert. 2009.09.025
9. Laggari V, Diareme S, Christogiorgos S, Deligeoroglou E, Christopoulos P, Tsiantis J, *et al*.: Anxiety and depression in adolescents with polycystic ovary syndrome and Mayer-Rokitansky-Kuster-Hauser syndrome. *J Psychosom Obstet Gynaecol* 2009, 30: 83–88. 10.1080/01674820802546204PubMed
10. Deeks A, Gibson-Helm M, Teede H: Anxiety and depression in polycystic ovary syndrome: a comprehensive investigation. *Fertil Steril* 2010, 93: 2421–2423. 10.1016/ j.fertnstert.2009.09.018
11. Benson S, Arck P, Tan S, Hahn S, Mann K, Rifaie N, *et al*.: Disturbed stress responses in women with polycystic ovary syndrome. *Psychoneuroendocrinology* 2009, 34: 727–735. 10.1016/j.psyneuen.2008.12.001
12. McSherry, J.A. [1990] Bulimia nervosa and polycystic ovary syndrome: evidence for an occasional causal relationship. *Med. Therapist* , 6, 10–11.
13. Benson S, Hahn S, Tan S, Mann K, Janssen OE, Schedlowski M, & al, et. [2009]. Prevalence and implications of anxiety in polycystic ovary syndrome: results of an internet –based survey in Germany. Hum Reprod, 24, 1446–51.
14. Cinar N., Kizilarslanoglu MC , Harmanci A., Aksoy DY, Bozdag G, Demir B & Yildiz BO. [2011]. Depression, anxiety and cardiometabolic risk in polycystic ovary syndrome. Human Reproduction, 26[12], 3339–3345.
15. AlHadi, A. N., AlAteeq, D. A., Al-Sharif, E., Bawazeer, H. M., Alanazi, H., AlShomrani, A. T., … AlOwaybil, R. [2017]. An arabic translation, reliability, and validation of Patient Health Questionnaire in a Saudi sample. Annals of General Psychiatry, 16[1].
16. Coffey S, Bano G, Mason HD. Health-related quality of life in women with polycystic ovary syndrome: a comparison with the general population using the Polycystic Ovary Syndrome Questionnaire [PCOSQ] and the Short Form-36 [SF-36]. Gynecological Endocrinology. 2006 Jan 1:22[2]: 80-6.
17. Sulaiman, Maha, Yahya Al-Farsi, Maha Al-Khaduri, Mostafa Waly, Jumana Saleh, and Samir Al-Adawi. "Psychological Burden among Women with Polycystic Ovarian Syndrome in Oman: A Case–control Study." International Journal of Womens Health Volume 9 [2017]: 897-904. doi:10.2147/ijwh.s145383.
18. Hussain, Arshad, Yasirhassan Rather, Zaidahmad Wani, Javidahmad Shiekh, Majidshafi Shah, Rajeshkumar Chandel, Mohd Ashraf Ganie, and Mansoorahmad Dar. "Prevalence of Psychiatric Disorders in Patients with a Diagnosis of Polycystic Ovary Syndrome in Kashmir." Indian Journal of Psychological Medicine 37, no. 1 [2015]: 66. doi:10.4103/0253-7176.150822.
19. Morgan, John, Samantha Scholtz, Hubert Lacey, and Gerard Conway. "The Prevalence of Eating Disorders in Women with Facial Hirsutism: An Epidemiological Cohort Study." International Journal of Eating Disorders 41, no. 5 [2008]: 427-31. doi:10.1002/eat.20527.