

## The relationship between psychological distress and health related quality of life among women with Polycystic Ovary Syndrome

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### **Abstract**

**Background:** Polycystic ovary syndrome (PCOS) is the most common endocrine disorder affecting 6-20% of reproductive aged women worldwide. It is commonly described as a significant genetic, hormonal, metabolic, and reproductive disorder. Women with PCOS were found to have higher levels of anxiety and depression, which may impact negatively on their health-related quality of life (HRQOL). **Objective:** To explore the relationship between psychological distress and health related quality of life among women with polycystic ovary syndrome. **Setting:** The study was carried out at outpatient gynecology clinics of EL-Shatby Maternity University Hospital in Alexandria, Egypt. **Subjects:** A convenient sample of 120 women with PCOS aged between 18-45 years, was selected from the aforementioned setting. **Tools:** three tools were used. Tool one: "A socio-demographic, Reproductive and clinical data structured interview schedule ". Tool two: "The Modified Polycystic Ovary Syndrome Questionnaire (MPCOSQ)". Tool three: " Kessler Psychological Distress Scale (K10)." **Results:** The study showed that slightly less than three-quarters (71.7%) of the studied subjects had severe mental distress, slightly more than one-half (51.7%) had moderate level of HRQOL. While 45.8% of them had low level of HRQOL. A highly statistically significant negative correlation between the total score of psychological distress of the studied subjects and their total score of health-related quality of life was found, where  $r = -0.465^*$  and  $p < 0.001^*$ . **Conclusion:** Psychological distress is negatively correlated with health-related quality of life (HRQOL) among women with polycystic ovary syndrome (PCOS), with emphasis on emotional problems, infertility, menstrual symptoms and menstrual predictability domains. **Recommendations:** Clinical staff including nurses should consider potential psychosocial problems when caring for patients with PCOS, not only the physical symptoms. Include evaluation of HRQOL in the assessment tool on patients' admission. Enhancing HRQOL may be part of nursing process. Developing periodical workshops to increase nurses' awareness about causes, risk factors, physical symptoms, psychological effects as well as, the relation between psychological distress and HRQOL. Designing individualized care plans which include women's concerns related to underlying endocrine imbalances, nutritional counselling, treating skin and hirsutism, and pursuing fertility treatment if desired. Implementing health/psycho-education programs for women with PCOS about causes, psychological and physical symptoms, management, counselling sessions, as well as psychiatric assistance in severe psychological suffer.

**Keywords:** Polycystic ovary syndrome, psychological distress, Quality of life.

### **Introduction**

Approximately one-fifth of women worldwide suffer from Polycystic Ovary Syndrome (PCOS), one of the most prevalent endocrine illnesses during the reproductive

years. In Egypt, it affects 13% of fertile women and 37.5% of secondary infertile women (Saeed Abd Elaziz et al., 2023). It is a long-term condition that has an adverse effects

on women's physical and mental well-being, lowers their health-related quality of life (HRQOL) and is linked to metabolic and reproductive issues (Aslam et al., 2023).

Even though the exact cause of PCOS is unknown, it most likely has multiple contributing factors. Hyperandrogenism and insulin resistance (IR) are the two main hormonal imbalances that cause PCOS. Moreover, the multifaceted etiology of PCOS is influenced by environmental factors, the genetic makeup, weight, and lifestyle choices (Lu et al., 2022; Singh et al., 2023).

The majority of women may not be alarmed by the varied clinical presentation of PCOS. The clinical signs of hyperandrogenism include acne, hirsutism, and alopecia. Obesity and increased body weight are indicators of IR. Additionally, irregular menstruation, infertility, and anovulation are common signs of PCOS (Hassan & Farag, 2019).

Since there is no one test that can be used to diagnose PCOS in every case, the correct diagnosis is done utilizing a combination of clinical and physical examinations, as well as some basic straightforward biochemical investigations. Current guidelines state that the Rotterdam criteria, which require the existence of two of the following three symptoms, should be used to diagnose PCOS in women. These symptoms are oligo/anovulation, the emergence of polycystic ovarian morphology, or clinical and/or biochemical hyperandrogenism (Kruszewska et al., 2022).

Furthermore, psychological problems including anxiety, stress, and depression are more common in women with PCOS. Compared to others. They have a five-fold higher risk of experiencing severe anxiety symptoms and a three-fold increased risk of experiencing moderate to severe depressive symptoms. Physical signs of PCOS, such as infertility, acne, obesity, oily skin and developing facial hair, are thought to stigmatize women and have a detrimental effect on their psychological health because these conditions let women to be viewed as

unfeminine, unpleasant, and have physical flaws (Aslam et al., 2023; Patten et al., 2023).

However, women's quality of life is significantly impacted by PCOS. According to Wright et al., (2024), the physical, social, and psychological components of health are referred to as health-related quality of life (HRQOL), which is described as "several domains that are influenced by a person's experiences, convictions, anticipations, and perceptions". Numerous studies conducted in the context of PCOS revealed that, affected females had a low HRQOL as a result of infertility, which leads to emotional and marital issues. Additionally because of hirsutism, excess body weight, obesity, alopecia, and acne (Barberis et al., 2022 & Dutkiewicz et al., 2023).

In light of the high incidence of PCOS and its detrimental effects on health that are linked to its psychological problems and complications, including anxiety and depression disorders, a low HRQOL, and patient discontent because of PCOS symptoms. Developing strategies to enhance general well-being in the PCOS community requires an understanding of the connections between psychological distress and HRQOL.

Therefore, in order to design effective nursing implications for women with PCOS, it is necessary to assess their psychological aspects and health-related quality of life. This is because psychological profile plays a critical role in PCOS and has an impact on patients' capacity to improve their HRQOL as well as self-management.

#### ***Aim of the Study***

This study aims to explore the relationship between psychological distress and health related quality of life among women with polycystic ovary syndrome.

#### ***Research Question:***

Is there a relationship between psychological distress and health related quality of life among women with polycystic ovary syndrome?

#### ***Materials and Method***

##### ***Materials***

***Design:*** The research design used in this study was a descriptive correlational one.

**Setting:** At EL-Shatby Maternity University Hospital's outpatient gynecology clinics, the study was carried out. This hospital was chosen since it serves as Alexandria's primary maternity health organization and has a high PCOS patient turnover rate. In addition, women with gynecological problems, including PCOS, can receive health services (diagnostic and management) from these clinics six days a week, from Saturday to Thursday, from 8 am to 2 pm.

**Subjects:** A convenient sample of 120 women with PCOS who were between the ages of 18 and 45 years was chosen. Pregnant women, those with other endocrine or metabolic disorders like hyperprolactinemia and thyroid dysfunction, those with a history of mental illness, and those using psychiatric medication were among the exclusion criteria. Women documented obstetrical and medical health records were revised to guarantee inclusion and exclusion data. The following parameters were used to estimate the sample size using the Epi-info 7 program: Population size = 200 over a 3-month period; PCOS prevalence = 20%; Acceptable error = 5%; Confidence coefficient = 95%; minimum sample size = 110.

**Tools:** Three tools were utilized to gather the data required for the study:

**Tool I: A Socio-demographic, Reproductive and clinical data structured interview schedule:** The researcher created and employed this tool, which had four primary components.

**Part one: Socio-demographic attributes** like age, education level, work status and marital status.

**Part two: Menstrual history** including age of menarche, rhythm, existence of premenstrual symptoms or dysmenorrhea and intake of analgesia.

**Part three: Infertility history** as existence of infertility, its duration, and receiving treatment for it.

**Part four: Clinical data** including data related to PCOS as its onset, signs and symptoms, treatment and follow up visits. As well as data about Body Mass Index (BMI).

### **Tool II: The Modified Polycystic Ovary Syndrome Questionnaire (MPCOSQ):**

Cronin et al., (1998) created the original version of this tool, then Barnard et al., (2007) revised it. The researcher modified and applied it to assess health-related quality of life of PCOS-affected women. The MPCOSQ has thirty items total, which are divided into seven domains: menstrual symptoms (three items), emotional disturbance (seven items), weight (6 items), hirsutism (5 items), acne (4 items), infertility (3 items), and menstrual predictability (2 items). On a 7-point Likert scale, where 7 was the best health-related quality of life and 1 was the lowest, the subject's responses to each item varied.

Women's health-related quality of life was categorized as follows: a score of 30 to 90 indicates low level, 91 to 150 represents moderate level, and 151 to 210 denotes high level of PCOS. The total score ranges from 30 to 210 accordingly.

### **Tool III: Kessler Psychological Distress Scale (K10):**

Kessler et al., (2002) originally created this tool to assess psychological distress. The researcher modified and employed it. It's a questionnaire that consists of 10-items designed to evaluate a woman's level of distress based on questions regarding anxiety and depressive symptoms that she had experienced in the last four weeks. Every item was scored by women on a five-point Likert scale, with one representing "none of the time" and five reflecting "all of the time". Psychological distress's total score ranges from 10 to 50. Women with a score of less than 20 are probably normal, a score of 20–24 indicates mild mental distress, a score of 25–29 reflects moderate mental distress, and a score of 30 or higher represents severe mental distress.

**Method:** The study was executed according to the following steps:

#### **Approvals:**

- Before beginning the study, approval was obtained from the Research Ethics Committee, Faculty of Nursing, Alexandria University.

- When requesting permission to collect data, the responsible authority of the research setting was provided with an official letter

from the Faculty of Nursing at Alexandria University, along with an explanation of the study's goals.

**Development of tools:**

- The researcher developed Tool I.
- In order to accommodate Egyptian culture, the researcher modified and translated Tools (II&III) into Arabic before translating them back into English.
- Five experts from the specialties of psychiatric & mental health nursing and gynecology & obstetrics nursing evaluated the content validity of Tools (II& III). The suggested changes were made in accordance, and the final forms were ready once they had been validated.

**Pilot study:**

- Twelve women diagnosed with PCOS were selected from the previously described settings participated in a pilot study to test the tools' clarity, applicability, and feasibility, as well as to find any barriers that would prevent data collection from occurring. Those patients were not included in the actual sample.
- Following the pilot study, tools were updated with the required modifications, and the statements and sub-statement organization were completed.

**Tools II and III were tested for reliability** using the Cronbach's alpha test, and the results were statistically accepted as  $r = 0.880$  and  $r = 0.932$ , respectively.

**Collection of data**

The researcher attended the study setting two or three days per week from 9 Am to 1 Pm. To determine those meeting the inclusion criteria, patients' records were reviewed. The researcher conducted one-on-one interview with each respondent during their visits to gynecological clinics. After building rapport with the patients, the researcher began gathering data from study participants. Every interview lasted from twenty to thirty minutes. The process was repeated until the total number of research participants was reached. Over the course of four months, from the beginning of November 2022 to the end of February 2023, the data were gathered.

**Statistical analysis:**

- Using the statistical program for social sciences (SPSS) version 28, the obtained data were updated, coded, categorized, computerized, tabulated, and analyzed. The results were then presented in descriptive and correlated formats. After that, the required tables were prepared.
- Categorical variables were described and summarized using percentages and frequencies.
- At the 5% level, the significance test was conducted.
- The relationship between psychological distress and health related quality of life among women with PCOS were identified.

**Ethical Considerations:**

Following an explanation of the study's purpose, each participant provided written informed consent prior to data collection. The study was conducted with the preservation of both data confidentiality and women's anonymity. The women were made aware that their involvement in the study is entirely voluntary and that they are free to refuse to participate or withdraw at any moment.

**Results**

**Table 1** elaborated distribution of the polycystic ovarian syndrome study participants according to their socio-demographic attributes. It was found that 63.3% of the studied women were between the ages of 20 and under 30, and that 24.2% of them were between the ages of 30 and under 40. Of the participants in the study, slightly more than two-fifths (40.9%) had completed secondary education, while one-third (33.3%) were illiterate or only could read and write. Among them, the majority (87.5%) were housewives and 95% were married.

**Table 2** illustrated distribution of the polycystic ovarian syndrome study patients based on their menstrual history. It was discovered that the majority of the study respondents (89.2%) experienced their menarche at an age of 12 years or older. In terms of menstrual rhythm, 74.2% of them experienced irregular menstruation. Premenstrual symptoms were found to be present in 98.3% of the women in the study. It

was also observed that the vast majority of them—95.8%—suffered from dysmenorrhea; out of this percent, 54.8% used analgesics to relieve the pain associated with their menstruation.

**Table 3** showed distribution of the polycystic ovarian syndrome study participants based on their history of infertility. The majority of the study women (95%) were determined to be infertile; of them, 52.8% had primary infertility diagnoses and 47.2% had secondary diagnoses of infertility. Additionally, the duration of their infertility suffered varied from 1.0 to 15.0 years, with a total mean of  $4.39 \pm 2.52$ . Of those studied women, 83.3% said they were receiving treatment for infertility.

**Table 4** reflected the polycystic ovarian syndrome study participants based on their clinical data at the time of the study. It was observed that over half (55.8%) of the participants in the study had PCOS since 1<4 years. In terms of PCOS signs and symptoms, it was noticed that the majority of the study participants had menstruation disorders and weight increase (98.3% and 97.5%, respectively), followed by 90% experiencing infertility and 83.3% having hirsutism. According to the table, 81.7% of the study participants took their medication on time, and 78.3% of them attended their follow-up visits on time. The data additionally disclosed that the total mean of BMI of the participants under investigation was  $32.91 \pm 4.87$ . Furthermore, it was observed that approximately 73.3% of them had a body mass index of 30 or higher, making them obese, and 24.2% were overweight, with a body mass index of 25 to 29.9.

**Table 5** showed distribution of polycystic ovarian syndrome study participants according to their levels of psychological distress. It was observed that only 6.7% of the research participants were considered normal, while just less than three-quarters (71.7%) had severe mental discomfort. While similar proportions of the participants (10.8% each) experienced mild and moderate mental distress. Their

psychological distress total mean score was  $32.85 \pm 7.39$ .

**Table 6:** illustrated distribution of polycystic ovarian syndrome study participants according to their levels of health-related quality of life (HRQOL). Findings showed that a moderate degree of health-related quality of life was experienced by slightly over half (51.7%) of the studied women. Only 2.5% of them had high level, compared to 45.8% who had low level. Their HRQOL total mean score was  $96.96 \pm 27.16$ .

**Table 7** presented the correlation between health-related quality of life domains and total score of psychological distress. The table shows a highly statistically significant negative correlation between total psychological distress score of the studied patients and their emotional problems ( $r = -0.566^*$  and  $p < 0.001^*$ ) and infertility ( $r = -0.478^*$  and  $p < 0.001^*$ ). As well as the total score of psychological distress of the studied subjects also shows a statistically significant negative correlation with their menstrual symptoms ( $r = -0.267^*$ ,  $p = 0.003^*$ ), menstrual predictability ( $r = -0.260^*$ ,  $p = 0.004^*$ ), and weight problems ( $r = -0.180^*$ ,  $p = 0.049^*$ ). However, there was a statistically insignificant negative correlation with acne ( $r = -0.162$ ,  $p = 0.077$ ) and hirsutism (and  $r = -0.122$ ,  $p = 0.184$ ). In addition, the total psychological distress score of the research subjects and their total health-related quality of life score exhibits a highly statistically significant negative correlation, where  $r = -0.465^*$  and  $p < 0.001^*$ .

### **Discussion**

Polycystic ovarian syndrome or PCOS is a very common disorder. It affects up to one in five women who are of reproductive age, making it a significant clinical and public health concern. The "thief of womanhood and beauty" is how most people refer to it. Women with PCOS experience many reproductive, cosmetic, and metabolic issues associated with the condition, which cause them to worry (Tabssum et al., 2021). Additionally, because of the negative impacts of infertility and other PCOS-related symptoms, women with PCOS are more prone

to develop psychological distress, including anxiety and depression. As a result, their health-related quality of life (HRQOL) decreases (Cao & Ren, 2023).

The present study's findings seemingly showed that, in contrast to a negligible percentage who reported having a high level of health-related quality of life, over half of the participants had low levels and slightly more than half had moderate levels. On the other hand, the majority of the studied women reported having moderate to severe mental distress. These findings show that women's HRQOL of life may be adversely affected by a high score for PCOS symptoms. This result is consistent with that of Aslam et al., (2023), who established that PCOS has negative significant effect HRQOL, which primarily affects the psychological and social health of women. Additionally, compared to women without PCOS, Tabassum et al., (2021) found that women with PCOS had lower HRQOL scores in all of the following domains: physical, social, interpersonal relationships, environmental, psychological, and financial. In a different study, Saeed Abd Elaziz et al., (2023) assessed health-related quality of life of women with PCOS. They discovered that while a minority of studied women had a high level of HRQOL, over two thirds of them had low levels. Along the same lines, Naous et al., (2023) found that a significant impairment in HRQOL is experienced by the majority of Lebanese women with PCOS.

The results of the present study showed that somewhat less than three-quarters of the studied participants experienced severe psychological distress, as frequent feelings of nervousness, anxiety, hopelessness, restlessness, fidgetiness, and depression. This finding corresponds with other research, showing that women with PCOS are more susceptible to experience psychological distress as a result of a range of unfavorable symptoms, including overweight, acne, infertility, growth of facial hair, and oily skin. Because these symptoms are viewed as unfeminine and unpleasant, they cause women to be shunned by society, which has a detrimental effect on their psychological state

(Fayaz et al., 2024). In the same line, Alamri et al., (2022) studied the role of PCOS in developing psychological burden in Saudi Arabian females. They found that, the PCOS population was shown to have a significant prevalence of psychological burden, with psychological distress predominating over depression and anxiety. The authors came to the conclusion that addressing the psychosocial needs of PCOS women will enhance their general health. A study done by Hasan et al., (2022) also showed that a significant portion of PCOS-affected women have a variety of mental health issues, such as depression and anxiety.

Findings of current study revealed a statistically significant negative correlation between the overall score of psychological distress and the total score of HRQOL in women with PCOS, that is to say, with increased level of psychological distress in PCOS patients, their health-related quality of life levels decrease. This result is almost consistent with other study's findings done by Sun et al., (2023) who reported that, compared to the general population, PCOS patients experienced higher levels of anxiety and depression, and these conditions were substantially and adversely connected with their HRQOL.

The present study results reflected that infertility was ranked the second most important contributor to psychological distress after emotional problems and followed by menstrual irregularities. Women felt afraid of not being able to have children, sad, troubled, concerned, and worried about infertility threat. Further determinants of psychological distress in the study subjects are obesity, hirsutism and acne, especially because these features interfere with the outer appearance and social norms. These results can be attributed to the fact that; women usually rate their infertility as a big problem because of the possibility of the socio-cultural generalizations when the social pressure to have a child shortly after marriage is strong. These results are confirmed by findings of Bazarganipour et al., (2013) who ranked infertility problems as the second highest concerns after menstrual

irregularities as more than half of women in their study had infertility. The authors also reported that reduced HRQOL is more closely linked to infertility and irregular menstruation than it is to obesity.

The findings of the current study generally agree with those of a study conducted by Kaur et al., (2023). They claimed that many PCOS sufferers experience several cosmetic problems and irregular menstruation, which can lead to dissatisfaction, embarrassment, and high stress levels. Since PCOS basically jeopardizes the very nature of being a woman, married women's dread of infertility may give rise to further worries. Psychological problems could further arise from this. A prolonged state of stress and anxiety can negatively impact a woman's ability to sleep, eat, exercise, generally feel good about herself as well as compromise the overall HRQOL if she has PCOS (Istiqomah et al., 2023).

In this respect, obstetrics & gynecologic nurses together with psychiatric & mental health nurses, are uniquely positioned to increase public awareness of PCOS and its impact. They should be aware of the psychological and physical ramifications of this illness. By offering specialized, targeted and comprehensive care to afflicted women, they can lessen the negative impact of this condition on quality of life. Effective psychoeducational and health programs may help women avert long-term psychological health problems by helping them understand the condition and its associated risk factors.

Women who need assistance learning adaptive coping mechanisms might be referred by psychiatric mental health and gynecologic nurses to nearby support groups.

Therefore, the current study's findings may help nurses and medical professionals create focused interventions, strategies and customized health promotion plans that are specifically designed to promote health-related quality of life among PCOS-affected women.

#### **Study Limitations**

-During some data collection days, the researcher found one patient only or no patients

at all, which increased the burden of this research.

- All studied subjects were married except 6 patients only. Due to cultural influence, single females having irregular menstruation didn't seek medical advice except after marriage when they suffer from infertility. At that time, they discover that they have PCOS. This affects proper presentation of single females at study results.

#### **Conclusion**

Based on the findings of the current study, it can be concluded that psychological distress is negatively correlated with health-related quality of life (HRQOL) among women with polycystic ovary syndrome (PCOS). Emotional problems, infertility, menstrual symptoms and menstrual predictability domains of HRQOL ranked as the main contributor for psychological distress, followed by weight problems, hirsutism and acne.

#### **Recommendations**

- Clinical staff including nurses should consider potential psychological problems when caring for patients with PCOS, not only the physical symptoms.
- Designing individualized care plans which include women's concerns related to underlying endocrine imbalances, nutritional counselling, treating skin and hirsutism, and pursuing fertility treatment if desired.
- Developing periodical workshops to increase nurses' awareness about causes, risk factors, physical symptoms, psychological effects as well as the relation between psychological distress and HRQOL.
- Include evaluation of HRQOL in the assessment tool on patients' admission.
- Enhancing HRQOL may be part of nursing process in clinical practice.
- Implementing health/psycho-education programs for women with PCOS about causes, psychological and physical symptoms, management, counselling sessions as well as psychiatric assistance in severe psychological suffer.
- Conducting similar study at different settings, on a large sample size and/or on single females.

**Table (1): Distribution of the polycystic ovarian syndrome study participants according to their socio - demographic attributes.**

Socio- demographic attributes	Total N=120	
	No.	%
<b>Age (years)</b>		
<20	7	5.8
20–	76	63.3
30–	29	24.2
≥40	8	6.7
<b>Educational level</b>		
Illiterate/Read and write	40	33.3
Primary/Preparatory	16	13.3
Secondary	49	40.9
University	15	12.5
<b>Work Status</b>		
Housewife (not working).	105	87.5
Working	15	12.5
<b>Marital Status</b>		
Single/Unmarried	6	5.0
Married	114	95.0

**Table (2): Distribution of the polycystic ovarian syndrome study patients based on their menstrual history.**

Menstrual history	Total N=120	
	No.	%
<b>Age of menarche (years)</b>		
<12	13	10.8
≥12	107	89.2
<b>Rhythm</b>		
Regular	31	25.8
Irregular	89	74.2
<b>Premenstrual symptoms</b>		
None	2	1.7
Yes	118	98.3
<b>Dysmenorrhea</b>		
No	5	4.2
<b>Yes</b>	<b>115</b>	<b>95.8</b>
	<b>Intake of analgesia (n=115)</b>	
Yes	63	54.8
No	52	45.2

**Table (3): Distribution of the polycystic ovarian syndrome study participants based on their history of infertility**

Infertility history	Total N=114	
	No.	%
<b>Suffering from infertility</b>		
No	6	5
Yes	108	95
		(n = 108)
Primary	57	52.8
Secondary	51	47.2
<b>The period of suffering from infertility (years)</b>		
Min. – Max.		1.0 – 15.0
Mean ± SD.		4.39 ± 2.52
Median		4.0
<b>Receiving treatment for infertility</b>		
Yes	90	83.3
No	18	16.7

SD: Standard deviation

**Table (4): Distribution of the polycystic ovarian syndrome study participants based on their clinical data at the time of the study**

Clinical data	Total N=120	
	No.	%
<b>Onset of PCOS (Years)</b>		
<1	11	9.2
1- <4	67	55.8
4- <8	34	28.3
≥8	8	6.7
<b>Signs and symptoms of PCO#</b>		
Menstruation disorders	118	98.3
Weight increase	117	97.5
Infertility	108	90.0
Hirsutism	100	83.3
Fatigue	73	60.8
Acne	72	60.0
<b>Regular intake of medication</b>		
Yes	98	81.7
No	22	18.3
<b>Regular in follow up visits</b>		
Yes	94	78.3
No	26	21.7
<b>Body mass index</b>		
Normal (18.5-24.9)	3	2.5
Overweight (25-29.9)	29	24.2
Obese (≥30)	88	73.3
Min. – Max.		22.0 – 42.0
Mean ± SD.		32.91 ± 4.87
Median		33.0

SD: Standard deviation

**Table (5): Distribution of polycystic ovarian syndrome study participants according to their levels of psychological distress.**

Levels of Psychological Distress	Total N = 120	
	No.	%
Normal	8	6.7
Mild mental distress	13	10.8
Moderate mental distress	13	10.8
Severe mental distress	86	71.7
<b>Total Score</b>		
Min. – Max.	14.0 – 48.0	
Mean ± SD.	32.85 ± 7.39	
Median	33.50	

SD: Standard deviation

**Table (6): Distribution of polycystic ovarian syndrome study participants according to their levels of health-related quality of life (HRQOL).**

Levels of Health Related Quality of Life	Total N = 120	
	No.	%
High (151 – 210)	3	2.5
Moderate (91 – 150)	62	51.7
Low (30 – 90)	55	45.8
<b>Total score</b>		
Min. – Max.	53.0 – 187.0	
Mean ± SD.	96.96 ± 27.16	
Median	96.50	

SD: Standard deviation

**Table (7): Correlation between health-related quality of life domains and total score of psychological distress (N=120).**

Health-related quality of life domains	Total score of psychological distress	
	r	P
Emotional problems	-0.566*	<0.001**
Infertility	-0.478*	<0.001**
Menstrual symptoms	-0.267*	0.003*
Menstrual predictability	-0.260*	0.004*
Weight problems	-0.180*	0.049*
Acne	-0.162	0.077
Hirsutism	-0.122	0.184
<b>Total score of health-related quality of life</b>	<b>-0.465*</b>	<b>&lt;0.001**</b>

r: Pearson coefficient

\*: Statistically significant at  $p \leq 0.05$

\*\* : Highly significant at  $p \leq 0.01$

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