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The status of relationship between coping strategies and quality of life in women with polycystic ovary syndrome

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Abstract:

BACKGROUND: Polycystic ovary syndrome (PCOS) has a profound effect on patients' quality of lives; and it is important to identify the affecting factors. The aim of this study was to assess the status of and relationship between coping strategies and quality of life in women with PCOS.

MATERIALS AND METHODS: In this cross-sectional study, we recruited 200 married women (20–50 years old) with PCOS from Arash and Bu Ali hospitals in Tehran in 2019–2020. Data were collected using the two following questionnaires: Coping strategies and quality of life. Data were analyzed using the regression analysis test in the SPSS-21.

RESULTS: The results showed that 119 (59.5%) participants were identified with increased hirsutism, 166 (83%) women were obese, 140 (70%) had irregular menstruation and 136 participants (68%) had painful menstruation as the side effects of PCOS. Sixty nine (34.5%) individuals reported unknown side effects. There was a relationship between emotional coping strategy and problem solving coping strategy with quality of life (beta = 0.270 and 0.219, respectively).

CONCLUSION: Patients with PCOS were more likely to use emotional coping strategies. Low quality of life exacerbated symptoms of the disease.

Keywords:

Coping strategies, quality of life, women with polycystic ovary syndrome

Introduction

Diseases affect quality of life.^[1] Polycystic ovary syndrome (PCOS) is a gynecological disease that has significant effects on patients' quality of life. PCOS is the most common endocrine disorder in women in childbearing ages.^[2] In fact, PCOS is a multi-symptomatic disease that involves certain physical and psychological implications. Various factors play roles in reducing the quality of life of patients with PCOS. Some of these factors are related to physical conditions such as menstrual irregularities, painful menstruations and its side effects, infertility-related problems, abortion, hirsutism, and obesity.^[3] There are

also some psychological side effect related to PCOS including impacts on self-concept and body image, confronting the disease, fear of infertility and loss of femininity, feeling of having a less attractive body and worrying about disorder in the body, depression and anxiety.^[4,5] These factors decrease the quality of life of the patients.^[6]

Since 1979, the term "quality of life" has been used as an important topic in healthcare system and has found its way into the scientific literature. The World Health Organization (WHO) defines quality of life as people's perceptions of their status in life.^[7] The main share of high or low quality of life index of individuals is related to physical and psychological factors as well

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as people's specific understanding of their quality of life in a particular situation. In other words, quality of life is influenced by individuals' physical health, psychological state, independence level, social communication, and their relationship with prominent factors of their environment.^[8] Meanwhile, individuals' understanding derives meaning from and is shaped by the situation in which they live and in relation to their culture and value systems, goals, expectations, standards, and concerns.^[9] Among the factors affecting people's quality of life are health and illness. Health-related quality of life is a dynamic and multidimensional concept which includes physical, psychological, and social aspects related to a disease or its treatment. Measuring quality of life, therefore, provides important information in terms of identifying the factors influencing diseases, the benefits of treatment or medical interventions from the perspective of patients.^[7]

Diseases usually reduce patients' quality of life, and the impact of which is mostly evident in parameters such as general health, limitations due to mental health, social functioning, reduced energy levels and mental health as well as in physical and psychological fields of quality of life.^[4] Given that there is no definitive treatment for PCOS, disease management should be aimed at improving the quality of life associated with patients' health by providing symptomatic well-being and preventing long-term complications of the disease.^[3] Factors affecting PCOS can be examined from various dimensions, including medical, psychological, individual, and social factors.^[10] Psychologically, identifying the influential factors and explaining how they affect the quality of life can be effective. Research has demonstrated that PCOS can severely affect women's mental well-being and mental health, and cause psychological problems among them.^[11] Results has shown that women with PCOS revealed lower and poorer performance in certain aspects of quality of life compared to healthy women.^[12] As a result, a number of studies in this field have sought to study quality of life, lifestyle, and emotional and physical characteristics affecting these patients so as to identify the factors influencing the disease.^[13]

Coping strategies are a set of cognitive and behavioral efforts that are employed to interpret and rectify a stressful situation.^[14] In fact, strategies are dynamic and continuous processes that are generally divided into two types of problem solving strategy and emotional strategy. Problem-solving coping strategy includes individuals' constructive actions in relation to stressful situations aimed at changing or reducing such situations, hence striving to eliminate or alter the source of stress.^[15] An emotion coping strategy, however, is used when the situation or event is unchangeable or the individual imagines so. This strategy includes

efforts to regulate emotional consequences of a stressful event, and maintains emotional balance by controlling the emotions resulting from stressful situations.^[16] Problem-solving-based coping skills are driven by both individual and environment while emotion-based coping skills are only guided by individuals.^[17] In general, the way of coping with problem plays an essential role in ability to adapt to stressful life situations,^[18] and using coping strategies to cope with stress and problems exerts major impact on individuals' quality of life.^[4,19]

Research findings show that coping strategies in women with PCOS can influence their quality of life. Moreover, research studies have depicted significant relationships between problem solving coping strategies and mental health and quality of life. Using problem-oriented styles have been identified as approaches to cope with demands and stressful limitations of environment to enrich the quality of life of such people.^[20] Identifying effective forms of coping as a mediating variable in relation to disease stress is of significant importance. Various stresses, with their negative impact on individual and social coping resources, reduce individuals' resilience, and leave long-term adverse impacts on their physical and mental health. As a result, the type of approach and coping strategy adopted by individuals is critical.^[14,19] This study is conducted to investigate the status of and relationship between coping strategies and quality of life in women with PCOS.

Materials and Methods

This was a cross-sectional descriptive study. Participants were 200 married women (20–50 years old)^[21] with PCOS referring to Arash and Bu Ali Hospitals in Tehran in 2019–2020. The study received ethics code of IR.IAU.TMU.REC.1399.092 from Faculty of Medicine, Islamic Azad University of Medical Sciences, Tehran. Prior to completing the questionnaire by the participants, purpose of the study was explained to them; and informed consents were obtained.

Data were collected using a questionnaire consisting of three parts. The first part was related to demographic information (age, education level, number of children, age at puberty and duration of marriage), and clinical symptoms (hirsutism, obesity, menstruation status, and side effects of PCOS) of participants of the study. The second part dealt with the quality of life of participants, evaluated using the short version of the WHO's quality of life questionnaire. The questionnaire has 26 items that measures people's quality of life in four dimensions of physical health, psychological health, social relationships and social environment. The responses range on a five-point Likert scale from very bad = 1 to very good = 5). Cronbach's alpha coefficient of the original

version is reported to be 0.73–0.89 for the fourfold scales and the total scale.^[6] This scale has been translated into 19 different languages, and is used in different countries to measure quality of life. Validity and reliability of the Persian version of the questionnaire have been reviewed and approved by Nasiri and Razaviyeh, and Cronbach’s alpha coefficient has been reported to be 0.84.^[22] The measured reliability of the instrument in this study was $\alpha = 0.74$. The third part of the questionnaire involved the standard questionnaire of coping strategies developed by Fleckman and Lazarus in 1984, with 66 items that examines eight coping strategies in two categories of problem solving coping strategy and emotional coping strategy based on a multiple choice Likert scale (1 = Never and 4 = Very much). Emotional coping strategy involves face-to-face confrontation (direct confrontation), isolation (seclusion), inhibition (self-control), escape and avoidance, and problem-solving coping strategy comprises seeking social support, accountability, tactful problem-solving and positive reassessment. Fifty items evaluate individuals’ coping style.^[23] The reliability of the questionnaire for this study was $\alpha = 0.61$.

Data were analyzed in a modern statistical software package (IBM Corp, SPSS version 20.0, Armonk, NY) in the two categories of descriptive statistics and inferential statistics. Descriptive statistics included frequency and percentage of frequency, mean, variances and ranges. After screening the data, Mahalanobis and Shapiro–Wilk tests were used to examine the discarded data as well as the normality of the data. Given the normality of the data, parametric statistics and stepwise regression analysis were used.

Results

Demographic and health-related characteristics of the participants are shown in Table 1.

According to the results, the age of participants was 20–51 years (mean = 35.5 ± 15.5), their puberty age was 11–16 (mean = 13.5 ± 2.5), and duration of marriage was 1–36 years (mean = 18.5 ± 17.5). As shown in Table 1, 62.5% of the participants were housewives, and most of the participants had diploma (59.5%). In addition, the majority of participants had no children (37.5%).

As shown in Table 2, 59.5% of the participants had experienced increased hirsutism, 83% were obese, 70% reported irregular menstruation, 68% suffered from painful menstruation, and 34.5% had unknown side effects as a result of PCOS.

The quality of life mean was 78.61 (standard deviation [SD] = 10.12) [Table 3]. The mean coping strategies was 175.30 (SD = 145.12). Among the coping strategies, the emotional coping strategy had higher mean (70.13), variance (52.68) and SD (7.25) compared to problem-solving coping strategy.

In the following part, the Pearson data correlation is calculated and presented in the table. According to Cohen (1988), the correlation rate of $r = 0.10$ – 0.29 is regarded as small or weak correlation while correlation of $r = 0.30$ – 0.49 is medium correlation, and correlation of $r = 0.50$ – 0.100 is large or strong correlation.^[24]

Stepwise regression analysis was performed for predictor variables (i.e., emotional and problem solving coping strategies) and its components for the criterion variable (i.e., quality of life). Emotional coping strategies and problem solving coping strategies were inserted into the equation, respectively, and the components of emotional coping strategy including face-to-face confrontation (direct confrontation), isolation (seclusion), inhibition (self-control), escape and avoidance, and

Table 1: Demographic and health-related characteristics of study participants

Variable	Minimum score	Maximum score	Range of score changes
Years	20	50	30
Maturity (years)	11	16	6
Duration of marriage (years)	1	36	35
Variable	Frequency (%)		
Employment status			
Employed	75 (37.5)		
Housewife	125 (62.5)		
Level of education			
High school	29 (14.5)		
Diploma	119 (59.5)		
Associate degree-undergraduate	42 (21)		
Graduate	10 (5)		
Number of children			
No children	75 (37.5)		
One child	42 (21)		
Two children	59 (29.5)		
More than three children	24 (12)		

the components of problem-solving coping strategies involving seeking social support, accountability, tactful problem solving and positive reassessment were examined. The results are presented in Tables 4 and 5.

Coping strategies (total score) had a correlation of 0.38 with quality of life while emotional coping strategy had a correlation of 0.270 which was slightly higher than

Table 2: Frequency and percentage of frequency of symptoms and side effects among the participants

Variable	Frequency (%)
Increased hirsutism	
Yes	119 (59.5)
No	81 (40.5)
Obesity	
Yes	166 (83)
No	34 (17)
Menstrual status	
Regular	57 (28.5)
Irregular	140 (70)
Unknown	3 (1.5)
Menstruation	
Yes	136 (68)
No	64 (32)
Side effects of PCOS	
Infertility	30 (15)
Preterm delivery	2 (1)
Abortion	31 (15.5)
Did not answer	69 (34.5)
N/A	68 (34)

PCOS=Polycystic ovary syndrome, N/A=Not available

problem solving coping strategy (0.230). In general, emotional coping strategy components showed higher correlation compared to problem solving coping strategies [Table 6].

As shown in Table 4, the degree of correlation between emotional coping strategy and problem solving coping strategy with quality of life was 0.27 and 0.34, respectively, and the F-statistic was significant. Five out of eight components of inhibition (self-control), tactful problem solving, isolation (seclusion), face-to-face confrontation (direct confrontation), escape and avoidance in relation to quality of life entered the equation, and the F-statistic was significant. Beta level in the variables of emotional and problem solving coping strategies with quality of life were 0.27 and 0.21, respectively, and the T-statistic was significant in both variables. Beta level in the components of inhibition (self-control), tactful problem solving, isolation (seclusion), face-to-face confrontation (direct confrontation), escape and avoidance were 0.319, 0.261, 0.187, 0.135, and 0.172, respectively, and the t-statistic was significant. Results are shown in Table 5.

Discussion

The aim of this study was to investigate the status of and relationship between adaptive strategies and quality of life in women with PCOS. As the results depicted, these patients mostly adopted emotional coping strategies, and in the analysis of the components

Table 3: T mean score of quality of life, problem solving, and emotional coping strategies divided by dimensions

Variable	Number	Minimum	Maximum	Range	Mean	Standard error	Variance	Standard deviation
Quality of life	200	60	107	47	78.61	0.715	103.37	10.12
Coping strategies (total score)	200	141	205	64	175.30	0.851	145.12	12.04
Emotional coping strategy	200	54	86	32	70.13	0.513	52.68	7.25
Face to face confrontation (direct confrontation)	200	10	21	11	15.01	0.170	5.84	2.41
Isolation (seclusion)	200	7	22	15	15.02	0.208	8.72	2.95
Inhibition (self-control)	200	12	24	12	17.38	0.174	6.07	2.46
Escape and avoidance	200	12	26	14	10.79	0.213	9.13	3.02
Problem-solving coping strategies	200	50	81	31	65.29	0.416	34.70	5.89
Seeking social support	200	10	24	14	17.46	0.176	6.21	2.49
Accountability	200	7	16	9	11.49	0.132	3.49	1.87
Tactful problem solving	200	9	24	15	16.46	0.183	6.70	2.58
Positive reassessment	200	15	30	15	22.84	0.193	7.52	2.74

Table 4: Model summary regression and F

Variables	Predictor variables	R	R ²	F	Significant
Strategies	Emotional coping strategies	0.270	0.073	15.62	<0.001
	Problem solving coping strategies	0.348	0.121	13.55	<0.001
	Inhibition (self-control)	0.391	0.102	22.44	<0.001
Components	Tactful problem-solving	0.410	0.168	19.88	<0.001
	Isolation (seclusion)	0.447	0.200	16.33	<0.001
	Face-to-face confrontation (direct confrontation)	0.465	0.216	13.41	<0.001
	Escape and avoidance	0.483	0.233	11.78	<0.001

of emotional and problem-solving coping strategies, inhibition (self-control), tactful problem solving, isolation (seclusion), face-to-face confrontation (direct confrontation), escape and avoidance were used more than others. In addition, of all the components mentioned, only tactful problem solving was grouped in the category of problem solving coping strategy, and accordingly, the results were consistent with the studies.^[16,25-27]

Women with PCOS are usually less satisfied with their appearance and show more social anxiety and fear. As a result, they experience more social isolation, leading to interpersonal sensitivity and incompatibility with social norms.^[10,28-30] Findings have revealed that emotional problems such as anxiety and depression are more prevalent among women with PCOS compared to healthy women.^[31] Psychological disorders in obese women, for example, are significantly higher than in healthy women,^[29] and clinical symptoms of PCOS are closely related to psychological distress. Due to greater emotional and affective problems in women with PCOS compared to healthy women, these women appear to be more likely to use underdeveloped defense styles in dealing with life's problems and stress.^[26]

Applying emotional coping strategies of inhibition (self-control), isolation (seclusion), face-to-face confrontation (direct confrontation), escape and avoidance is effective in reducing mental health and

improving quality of life among patients with PCOS. While emotional coping strategy is effective in the short run, it is psychologically a barrier to psychological adjustment in long run, and increases the symptoms of mental distress, such as increased depression and anxiety and lower quality of life.^[27] Furthermore, applying inefficient coping strategies in long run can cause a wide range of stable stress and emotional disorder which is reflected in physical, social and overall living environment of individual, thus avoiding individual to enjoy proper quality of life to grow and develop.^[20] Stress-oriented illnesses and deterioration of general health are more common in those who are constantly using emotional coping strategies,^[25] and these issues ultimately reduce quality of life of these women.^[29] This study like other cross-sectional studies have used self-reported data. As a strength, most of the studies have focused on medical factors and little research has been done on factors affecting PCOS in the field of psychological factors.^[27] Thus, our study have tried to shed light on this part of the issue. Understanding the psychological factors affecting quality of life of women with PCOS could help healthcare providers to better manage the condition.

Conclusion

Patients with PCOS are more likely to use emotional coping strategies, and low quality of life seems to

Table 5: Regression significance

Variables	Predictor variables	B	SE	β	t	P
Strategies	Emotional coping strategies	0.377	0.095	0.270	3.95	<0.001
	Problem-solving coping strategies	0.377	0.115	0.219	3.27	<0.001
	Inhibition (self-control)	1.31	0.276	0.319	4.73	<0.001
	Tactful problem solving	1.02	0.258	0.261	3.95	<0.001
Components	Isolation (seclusion)	0.64	0.228	0.187	2.80	<0.01
	Face-to-face confrontation (direct confrontation)	0.56	0.285	0.135	1.98	<0.05
	Escape and avoidance	0.58	0.229	0.172	2.57	<0.01

SE=Standard error

Table 6: Pearson correlation, quality of life variables, and coping strategies divided by dimensions

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Quality of life	1											
Coping strategies (total score)	0.388**	1										
Emotional coping strategy	0.270**	0.777**	1									
Face to face confrontation (direct confrontation)	0.230**	0.540**	0.691**	1								
Isolation (seclusion)	0.237**	0.412**	0.642**	0.248**	1							
Inhibition (self-control)	0.319**	0.567**	0.637**	0.314**	0.272**	1						
Escape and avoidance	-0.034	0.521**	0.681**	0.359**	0.169**	0.212**	1					
Problem-solving coping strategies	0.238**	0.545**	0.074	0.088	-0.031	0.094	-0.028	1				
Seeking social support	0.014	0.277**	0.042	0.078	0.115	0.175*	0.060	0.591**	1			
Accountability	0.142*	0.460**	0.199**	0.142*	-0.058	0.110	0.163*	0.524**	0.112	1		
Tactful problem solving	0.310**	0.328**	0.018	-0.007	-0.035	0.180*	-0.099	0.663**	0.095**	0.178*	1	
Positive reassessment	0.155*	0.320**	-0.069	0.008	-0.124	0.091	-0.162*	0.735**	0.346**	0.210**	0.287**	1

*Significant level of 0.05 of two dimensions, **Significant level of 0.01 of two domains

exacerbate the symptoms of the disease. It appears that teaching problem-solving coping strategies can increase quality of life and self-care of these patients; and ultimately general quality of life. In addition to receiving appropriate medical services for the treatment process, these women need to receive psychological services such as training on adoption of appropriate strategies to deal with complications of the disease. Nurses and health-care providers can help patients improve their coping strategies.

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Conflicts of interest

There are no conflicts of interest.

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