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Comparing the effectiveness of emotion-focused and cognitive-behavioral therapies on body image, anxiety, and depression in women with PCOS

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Abstract:

BACKGROUND: Polycystic ovary syndrome (PCOS) is a heterogeneous disease that is usually seen in women of reproductive age and causes complications such as body image dissatisfaction, anxiety, and depression. This study was done with the aim of comparing the effectiveness of emotion-focused therapy (EFT) and cognitive-behavioral therapy (CBT) on body image, anxiety, and depression in women with PCOS.

MATERIALS AND METHODS: This research was semi-experimental with a pre-test–post-test design with control and follow-up groups. The statistical population included all women with PCOS who were referred to the infertility clinic of Afzalipur Hospital in Kerman in 2022. A total of 45 patients were selected as a sample using the convenience sampling method and then they were randomly assigned to two experimental groups (15 people each) and a control group (15 people). After the pre-test, the experimental groups were subjected to the interventions of EFT and CBT, and afterward the post-test was performed. Cash *et al*., body image questionnaire, and Beck anxiety and depression questionnaires were used. Data were analyzed using PSS21 software and analysis of variance.

RESULTS: The findings revealed that the effectiveness of EFT and CBT on body image, anxiety, and depression is significant ($P < 0.05$). The comparison of the two therapy showed that the effect of CBT on body image, anxiety, and depression is more than EFT. Moreover, there was no statistically significant difference between the post-test and follow-up scores ($P > 0.05$).

CONCLUSION: According to the results, CBT can reduce dissatisfaction with body image, anxiety, and depression in women with PCOS, therefore it is recommended to use this therapy.

Keywords:

Anxiety, body image, cognitive–behavioral therapy, emotion-focused therapy, polycystic ovary syndrome

Introduction

Polycystic ovary syndrome (PCOS) is a heterogeneous disease that usually occurs in women of childbearing age, and is associated with complications such as infertility, obesity, insulin resistance, and increased androgen levels.[1] This syndrome is an endocrinopathy disorder characterized by chronic hyperandrogenism and anovulation, and its symptoms appear in the early years of puberty with irregular menstrual cycles, ovulation, and acne.[2] Polycystic ovary syndrome is associated with significant complications and reduced quality of life[3] and causes complications

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such as overweight, menstrual disorders, depression, anxiety, isolation, reduction of femininity characteristics, and disruption of marital relationships.[4]

The increase in the prevalence of eating disorders followed by overweight in women with PCOS causes body image dissatisfaction.[5] Dissatisfaction with body image is a negative evaluation of personal physical characteristics, including dissatisfaction with body shape, gender, sexual organs, and appearance, and it plays an important role in quality of life.[6] Research has shown that in women with PCOS, the level of stress caused by body image is high, and this factor increases the level of anxiety and depression.[7] Women with PCOS feel less satisfied with their physical appearance and show more social anxiety and fear.[8] Emotional problems such as anxiety and depression are common among women with PCOS, compared to healthy women.[9] In previous studies, it has been determined that PCOS is associated with anxiety[10] and depression[11] and a lower quality of life.[12]

Among the therapies that seem to be effective on body image and anxiety and depression in women with PCOS are emotion-focused therapy (EFT) and cognitive-behavioral therapy (CBT). These methods guide the therapist and clients toward strategies that enable awareness, acceptance, application, regulation of emotions and emotions, and the experience of correcting emotions and emotions with the help of the therapist. Emotion-focused therapy is based on the premise that the most efficient way to change maladaptive emotions is not through changing the way you think or learning a new skill, but through activating more adaptive emotions.[13] For this reason, it can be a predictor of success in the treatment of a syndrome such as PCOS, and have lasting effects in its treatment. Emotion-focused therapy has been proven effective in the treatment of many disorders such as depression, anxiety, and eating disorders.[14] Therapy helps patients to become aware of their feelings and reconstruct the abnormal cognitive–emotional schemas that are often the basis of anxiety symptoms and ultimately recover.[15] Research has shown that EFT is an effective intervention method for improving body image for women.[16]

Cognitive-behavioral therapy is undoubtedly one of the most important developments in the process of improving psychopathology in the last 50 years. This therapy can cause self-monitoring, setting realistic and attainable goals, developing new coping skills to control or prevent the recurrence of complications caused by this syndrome, and promoting alternative behaviors in psychological and emotional crisis situations in women with PCOS.[17] The set of disorders that have responded well to CBT include psychotic disorders, depression, anxiety disorders, personality disorders, aggression, discomfort caused by pain and chronic fatigue, pregnancy complications, and women's hormonal imbalance.[18] Cognitive-behavioral therapy causes brain activation and functional changes in the amygdala, insula, and anterior corticolimbic circuits of the brain, which control cognitive, motivational, and emotional aspects of physiology and behavior and can be effective in improving the performance of people with chronic diseases.[19] Additionally, CBT is recommended by the American Psychological Association and the American College of Physicians as a first-line treatment for depression.[20]

According to the research background, it is possible that both treatment methods are effective in the treatment of PCOS complications due to underlying reasons. So far, limited research has been done to investigate the effects of EFT and CBT on body image, anxiety, and depression in women with PCOS. Considering the extent of the consequences of this syndrome in women, despite the use of drug treatments, the application of psychological therapies can be effective to a large extent. Based on this, this research intends to achieve a general treatment in addition to maintenance drug treatments to improve the complications of this syndrome by comparing the effectiveness of therapeutic methods of EFT and CBT from the aspect of body image, anxiety, and depression in women with PCOS. With the aim of which of EFT and CBT therapies can be more effective on body image, anxiety, and depression in women with PCOS.

Materials and Methods

Study design and setting

The current research is a semi-experimental study with a pre-test and post-test design with a control and follow-up group. Women with PCOS between the ages of 25 and 45 who referred to the infertility clinic of Afzalipur Hospital in Kerman were included in this study. The method of conducting the study was that after coordinating with the Hospital, researcher referred to the infertility department and selected women with PCOS who were ready to cooperate. After introducing and stating the objectives and the necessity of conducting the research in order to comply with ethical points, first, the consent form for participation in the study was completed by the subjects and they were given the opportunity to withdraw from the research at any moment they wished. The participants were assured that all their information would be kept confidential. Then, the demographic characteristics, body image, depression, and anxiety questionnaires were provided to them and collected after completion. A total of 45 patients were selected by convenience sampling method. Then, participants were randomly divided into 3 groups of 15 people and

Table 1: Summary of the EFT sessions based on the Johnson protocol

Session	Content
1	The purpose of creating unity and empathic reflection with the patient and how the therapist communicates with the patient with the syndrome. Initial interview, taking a pre-test, stating the rules and goals and the number of sessions, and explaining and presenting an emotion-focused approach for the individual.
2	Identifying negative interactive cycles at the same time as they appear in the same session and describing how this cycle causes attachment insecurities to persist and creates confusion for the patient.
3	Discovering negative interactive cycles at the same time as it appears in the meeting; That is, when a patient with the syndrome becomes isolated as a result of complications such as obesity, infertility, and lack of physical fitness, the therapist should reflect this behavior.
4	Reframing the problem in the form of a negative cycle, underlying emotions and attachment needs, the cycle is framed as a common enemy and a source of deprivation and confusion for the patient.
5	Changing and reconstructing interactive patterns—summarizing and reviewing the task of the previous session, increasing identity and understanding of emotions, attachment needs, and unifying the interactions that the patient has not yet achieved.
6	Repeating the acceptance of new experiences that the patient has as a result of paying attention to his emotions when he has had exercises and experiences to improve and reduce the complications of the syndrome, as well as new answers he has given in relation to communicating with others.
7	Making the patient express his needs and desires. She is withdrawn due to prolonged problems of withdrawal syndrome and in this case, he changes his interactive status.
8	Stabilization, consolidation, and integration—summarizing and reviewing the assignment of the previous session. Facilitating the creation of fresh and new solutions to solve old communication problems.
9	Summarizing and reviewing the homework of the previous session. Because of the safe and reliable atmosphere that has been created, the person discovers new solutions to get rid of the symptoms of the syndrome.
10	Review of the patient's progress by the therapist. Highlighting a fresh, positive engagement cycle and reminding of improvements by comparing it to the previous dysfunctional cycle.
11	Supporting the individual's ability to sustain changes. Generalization of interventions to normal life during recent weeks, review and how to continue the changes outside and at the end of the sessions and in normal life.

matching was done based on being married, age, and education. The first group includes 15 women with PCOS who received EFT during eleven sessions. The second group included 15 women with PCOS who received CBT during eighteen sessions, and the third group included 15 women with PCOS who were placed in the control group and did not receive any therapy. The summary of the interventional sessions are presented in Tables 1 and 2. Inclusion criteria were: women aged 25–45 years, having a minimum education to be able to answer the questionnaires and complete an informed consent form stating that participation in treatment sessions is voluntary, not suffering from physical and mental diseases and substance abuse. Exclusion criteria included: participating in interventional studies related to mental health at the same time, having an unexpected pregnancy and surgery, and having more than two absences for various reasons.

Study participants and sampling

The statistical population of the study includes all women with PCOS between 25 and 45 years of age who visited the infertility clinic of Afzalipur Hospital in Kerman. The research sample consisted of 45 patients and was selected by available sampling method. The participants were randomly divided into 3 groups. 15 people divided and matched based on being married, age, and education, the first group included 15 women during eleven EFT sessions, the second group included 15 women who received CBT during eighteen sessions, and the third group included 15 women with PCOS who were in the group were controlled and did not receive any treatment.

Data collection tool and technique

The following tools and techniques were used to collect data.

Body Image Questionnaire (BIQ): This questionnaire contains 46 items designed to assess body image by Cash *et al*.[21] In its initial form, the BIQ has 6 subscales, which include appearance evaluation, appearance orientation, fitness evaluation, fitness orientation, overweight preoccupation or subjective weight, and body areas satisfaction. This questionnaire is in the form of a Likert scale, in which questions 1–37 are graded from 5 completely agree to 1 completely disagree, and questions 38–46 are graded from 5 very satisfied to 1 very dissatisfied. Scores from 46 to 108 indicate a person's level of bad satisfaction with the multidimensional relationships of his body. Scores from 108 to 170 indicate a person's average satisfaction with the multidimensional relationships of his body, and scores from 170 to 230 indicate a person's good satisfaction

Table 2: Summary of CBT sessions according to Leahy's techniques

Session	Content
1	Stating the purpose of treating the syndrome, reviewing the structure and meeting rules, introducing the problems and complications caused by PCOS syndrome, initial interview, and taking a pre-test.
2	Informing the patient about the diagnosis of her disease.
	Creating a list of treatment goals.
	Explaining the treatment process—The therapist explains to the patient how their thoughts can cause a decrease or increase in feeling.
3	Behavioral interventions include determining and identifying of behavioral goals.
	Providing patient instruction on reward-based planning and activity planning.
	Encouraging the patient to increase self-reward.
	Encouraging the patient to reduce passive behaviors.
4	Cognitive interventions include teaching the patient to make connections between automatic thoughts and feelings.
	Teaching the patient to categorize distorted automatic thoughts.
	Eliciting the patient's automatic thoughts and challenging them during the treatment session.
5	Task: presenting a worksheet for recording thoughts and moods, classifying automatic thoughts, spontaneous action of the patient to reward-based planning and activity planning, increasing self-rewarding, completing the self-help form: A-B-C technique and completing the form of thoughts against possible realities and completing the form of grading emotions and thoughts.
6	Homework assessment.
	Evaluation of depression and anxiety and problems caused by the syndrome.
7	Teaching and practicing self-expression skills.
	Encouraging the patient to increase rewarding behavior toward others.
	Encouraging the patient to increase positive social contacts.
8	Identifying the desired symptoms of depression, hopelessness, indecision, self-criticism, lack of energy, lack of pleasure, training clients to use the worksheet to record ineffective automatic thoughts daily.
9	Providing a worksheet for recording the patient's dysfunctional automatic thoughts daily.
	Using special cognitive techniques to challenge automatic thoughts.
10	Homework assessment.
	Evaluation of depression and anxiety and problems caused by the syndrome.
11	Continuing to teach and practice problem-solving skills.
	Teaching the communication skills of active listening, improving communication, and empathizing with the patient.
12	Identifying and challenging automatic thoughts that are persistently problematic for the patient.
	Identifying and challenging inconsistent assumptions and examining the patient's personal schemas.
13	Giving practice to the patient to use different techniques to challenge hypotheses and schemas, self-expression, self-reward, continue to practice communication, and problem-solving skills.
14	Homework assessment.
	Evaluation of depression and anxiety and problems caused by the syndrome.
15	Continuing to teach and practice problem-solving skills.
	Continuing to teach the patient communication skills (active listening, communication modification, and empathy).
16	Continuing to identify and challenge problematic automatic thoughts and assumptions.
	Reviewing old automatic thoughts (from previous therapy sessions) and noting if these thoughts are still felt by the patient to be evaluated.
17	Asking the patient to continue to identify and challenge their automatic thoughts, assumptions, and schemas.
	Creating a new list of adaptive assumptions and schemas and writing a charter of the patient's rights and wishes.
18	Summarizing and providing additional explanations, and taking the post-test.

with the multidimensional relationships of his body. Cash *et al*., showed that all subscales of the questionnaire have acceptable internal consistency and stability, and the validity of the subscales ranged from 0.83 to 0.92 Cronbach's alpha.[21] The Persian version of the BIQ was validated in the study of Izaadi *et al*.[22] and Cronbach's alpha of the whole questionnaire was reported as 0.87. In this study, the total Cronbach's alpha was 0.82.

Depression Inventory-short form: The depression inventory was prepared by Beck and Steer in 1961 and its revised form was published in 1987. This questionnaire has 21 questions and its scoring is based on Likert scale from 0 to 3. The validity of the questionnaire using the test–retest method has been reported as 0.48 to 0.86.[23] In Iran, Rajabi[24] reported the Cronbach's alpha coefficient for the whole questionnaire as 0.89, the correlation coefficient between the short form and the 21-question form as 0.67. In the present study, the total Cronbach's alpha was 0.86.

Beck Anxiety Inventory (BAI): The anxiety inventory was introduced by Iron Beck, 1990. Beck Anxiety Inventory is a self-report questionnaire prepared to

measure the intensity of anxiety in teenagers and adults. Its internal homogeneity using alpha coefficient is 0.92, its reliability is 0.75 with a retest interval of one week, and the correlation of its items varies from 0.30 to 0.76.[25] Kaviani and Mousavi[26] validated its Persian version and reported its reliability coefficient as 0.92 with a two-week interval. In this study, Cronbach's alpha was calculated at 0.81.

Treatment sessions for women with PCOS were conducted based on Leahy's cognitive-therapy techniques[27] and Johnson's EFP,[28] and the content validity of the treatment protocols was checked and confirmed by psychological specialists and psychotherapists. Then, the subjects responded to body image, anxiety, and depression questionnaires immediately after holding the training sessions and three months after the end of the therapy sessions. The data were analyzed by using analysis of covariance and IBM SPSS Statistics version 21.0.

Ethical consideration

This study was approved by the ethical committee of the Islamic Azad University Torbat-e Jam branch with the ethical code IR.IAU.TJ.REC.1401.043.

Results

The mean and standard deviation of body image, anxiety, and depression scores are shown in Table 3. The Kolmogorov–Smirnov test was used to check the normality of the variables. The results showed that the presumption of normality of research variables was observed and the distribution of all variables was normal ($P > 0.05$). To check the homogeneity of variance–covariance matrices, the Boxes M test was applied ($M = 9.33$, $F = 1.42$, $P < 0.05$). Levine's test was used to investigation the variances in the dependent variable. F values in Levine's test for body image ($F = 0.01$, $P < 0.05$), anxiety ($F = 1.174$, $P < 0.05$), and depression ($F = 0.09$, $P < 0.05$) are not significant. Therefore, the error variances in the research variables in the experimental and control groups do not have a significant difference, in other words, the difference between the groups is significant.

Boxes M test was also used to check the equality of the covariance of the groups and the results showed that the hypothesis of the equality of the covariance of the groups was confirmed at the level of 0.05 ($F = 1.15$, $P = 0.255$).

Multivariate Analysis of Covariance (MANCOVA) was used to investigate the effectiveness of EFT and CBT on body image, anxiety, and depression in women with PCOS. According to the results, as can be seen in Table 4, the significance levels of Pillai's effect, Wilks's lambda, Hotelling's effect, and Roy's largest root are less than 0.05, which indicates that two experimental groups and the control group have a significant difference in at least one of the variables. This shows that the therapies of EFT and CBT are effective on each of the study variables such as body image, anxiety, and depression.

The results of MANCOVA in Table 5 show that the effectiveness of EFT on body image, anxiety, and depression is significant ($P < 0.05$); According to the results, it can be said that the amount of this effect on body image is 21%, anxiety 14% and depression 21%. Also, the effectiveness of CBT on body image, anxiety, and depression was significant ($P < 0.05$); the effect size on body image is 47%, anxiety 22%, and depression 38%. Considering the effect coefficient, the comparison of the two therapies shows that the effect of CBT on body image, anxiety, and depression was more than EFT.

Also, the post-test and follow-up mean were compared, which results are shown in Table 6. According to the results, there is no significant difference between the post-test and follow-up scores ($P > 0.05$), in other words, the therapy effect was permanent and there was no change in the mean follow-up scores compared to the post-test.

Table 3: Mean and standard deviation of the research variables in the studied groups

Test	Variable	Mean±SD		
		EFT	CBT	Control
Pre-test	Body image	123.13±7.81	134.2±9.92	140.06±12.06
	Anxiety	58.6±4.88	48.8±7.57	45.86±13.35
	Depression	19.6±9.63	25.0±11.93	21.53±10.69
Post-test	Body image	160.6±15.65	150.4±11.3	141.8±12.49
	Anxiety	35.2±4.48	45.33±12.78	45.4±13.08
	Depression	5.6±9.52	9.4±12.42	21.2±10.85

Discussion

The present study was conducted with the aim of comparing the effectiveness of EFT and CBT on body image, anxiety, and depression in women with PCOS.

Table 4: Results of multivariate covariance analysis on body image, anxiety, and depression

Test	Value	*F*	df hypothesis	df error	*P*	Effect Size	Power
Pillai's trace	0.87	6.01	10	78	0.001	0.43	0.99
Wilks' lambda	0.295	6.39	10	76	0.001	0.45	0.99
Hotelling's effect	1.83	6.77	10	74	0.001	0.47	0.99
Roy's largest root	1.44	11.25	5	39	0.001	0.59	0.99

Table 5: Multivariate analysis of covariance on body image, anxiety, and depression

Group	Variable	SS	df	MS	*F*	*P*	Eta-squared	Power
CBT	Body image	3830.7	1	3830.7	25.77	0.001	0.47	0.99
	Anxiety	780.3	1	780.3	8.15	0.008	0.22	0.78
	Depression	1825.2	1	1825.2	17.51	0.001	0.38	0.98
EFT	Body image	842.7	1	842.7	7.63	0.01	0.21	0.76
	Anxiety	512.53	1	512.53	4.63	0.04	0.14	0.54
	Depression	1044.3	1	1044.3	7.67	0.01	0.21	0.76

Table 6: *t*-test to compare post-test and follow-up results

Group	Variable	Mean±SD		df	*t*-test	*P*
		Post-test	Follow-up			
CBT	Body image	160.06±15.65	142.46±15.98	14	1.73	0.106
	Anxiety	35.2±4.47	40.06±7.06	14	1.918	0.076
	Depression	5.6±6.52	7.4±11.66	14	1.87	0.082
EFT	Body image	150.04±11.3	150.8±11.05	14	0.685	0.504
	Anxiety	45.33±12.87	44.86±12.85	14	0.888	0.389
	Depression	9.4±11.66	8.8±11.1	14	1.5	0.156

According to the results, EFT and CBT were effective on body image, anxiety, and depression of women with PCOS, while the effectiveness of CBT was more than EFT on research variables. The results of this study were consistent with the findings of Glisenti *et al.*,[29] Najafi *et al.*,[30] Paulson *et al.*,[7] and Cooney *et al.*[20] Hamdan-Mansour *et al.* showed in their research that the use of CBT is very effective in reducing depression symptoms.[31] Also, Heidary and Akbarzadeh found that women with PCOS who have overweight and obesity and symptoms of anxiety and depression improved significantly after receiving CBT, which indicates CBT can increase the level of health-promoting behaviors.[32] Geschwind *et al.* also found that CBT improves depression.[33] In explaining the results of the present study, it can be said that negative perceptions of body image in patients with PCOS are associated with dissatisfaction with appearance, decreased female identity, decreased feeling of sexual attractiveness, and self-consciousness about appearance. Many women's self-esteem is based solely on their body image, and thus affects their social functioning and interpersonal relationships. As a result, the attitude towards the body is different in women with PCOS.[34] These women have symptoms of body deformity disorder, depression, and anxiety. Research has shown that psychotherapy interventions aimed at improving body image may also reduce symptoms of depression and anxiety.[35] In cases where a person has severe dissatisfaction with his body image, this issue can lead to body dysmorphia disorder, which is characterized by an irrational focus on illusory or partial body defects.[36] Moreover, studies have shown that depression level in obese women with PCOS is more than healthy obese women.[37] One of the interventions that can play a major role in improving the complications caused by a chronic disease and the problems caused by it is CBT, because the main goal of this therapy is to change people's beliefs and behaviors that affect their performance.[38] Therefore, CBT helps to reduce body image dissatisfaction through changing beliefs. Because the main emphasis of this approach is on the effectiveness that cognition, emotion, and behaviors have on each other.[39]

In CBT, unreasonable cognitions and negative hypotheses are challenged, which play a role in creating unpleasant emotional conditions. In order to have a successful treatment, it is necessary to solve underlying problems such as anxiety and depression.[40] By changing the beliefs and as a result of changing the behavior, performance, and habits of these people and by challenging unreasonable cognitions and negative hypotheses, they can gain more ability to deal with the problems caused by the syndrome and have a healthier lifestyle along with the maintenance of drug treatment. In EFT, examining the basic factors of processing emotional schemas, such as cognitive-behavioral and emotional factors, is considered as the main therapeutic goal. Therefore, it can be said that people can learn with the experience they gain in the emotional awareness stage, instead of suppressing their emotions or being defeated by them, they should be aware of their emotions and come to the knowledge that negative emotions are not necessarily stable and can be controlled.[41]

According to previous studies, the complications of PCOS are depression, anxiety, overweight, and inappropriate body image, and CBT is the standard model of psychological intervention for the treatment of this group of sufferers.[42] Therefore, the effectiveness of this treatment can be explained. Emotion-focused therapy is also an effective approach and a standard model of psychological intervention to reduce the incompatible negative cycle and deepen emotional experiences, especially attachment, increasing awareness of emotions, expressing new emotions, coping with the difficulties of emotional regulation, and appropriate emotional expression in the conditions faced with problems[43] and in this way, it can be effective in treating the wide complications of this syndrome.

Regarding the comparison of two therapy approaches, considering that body image, anxiety, and depression are among the disorders that are strongly influenced by

unreasonable cognitions and negative hypotheses. In CBT, unreasonable cognitions and negative hypotheses that play a role in creating unpleasant emotional conditions are challenged, so the effectiveness of CBT seems natural. Also, one of the other factors that cause body image dissatisfaction, anxiety, and depression in women with PCOS is low self-esteem and feeling of self-efficacy. According to Lowndes *et al*.,[44] an important issue that can be raised about the effectiveness of CBT is the increase in self-efficacy of people participating in the therapy period after receiving CBT. Accordingly, the effect of CBT is more than EFT in women with PCOS.

Limitation and recommendation

This study had limitations in that it was not possible for all women with PCOS to participate in the research, and also the samples of the present study were limited to a specific geographical region, which can limit the generalizability of the results. Since this research was unique to the Kerman city, it is suggested to be used in other communities as well. It is also recommended that therapists use CBT in order to increase body image satisfaction and reduce anxiety and depression in women with PCOS.

Conclusion

According to the research results, CBT can reduce body image dissatisfaction, anxiety, and depression in women with PCOS. Therefore, it is necessary to use this therapy in order to increase the level of satisfaction with the body image and reduce the anxiety and depression of women with PCOS. Also, therapists are advised to pay attention to the effectiveness of this treatment therapy.

Ethical considerations

In order to comply with ethical issues, written consent was obtained from the subjects before entering the research. The subjects entered the research voluntarily and there was no compulsion in this case. In addition, the information about the subjects was kept confidential.

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Conflicts of interest

There are no conflicts of interest.

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