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Psychological functioning in patients with different PCOS phenotypes: exploring attachment styles and stress coping

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Summary

Aim. To assess attachment patterns and stress coping strategies in patients with NIH and non-NIH phenotypes of PCOS. Additionally, to explore the correlations between attachment and stress coping, as well as the correlations between BMI, hirsutism, and psychological variables.

Material and Methods. 62 patients with NIH phenotypes and 32 patients with non-NIH phenotypes were enrolled into the study. Each patient underwent gynecological and endocrinological diagnostics. Attachment Styles Questionnaire was used to assess attachment, and Mini-Cope Inventory was applied to assess stress coping.

Results. The anxious-ambivalent attachment pattern was more pronounced in patients with "classic" NIH phenotypes. Patients with NIH phenotypes were less likely to use active coping, planning, and acceptance as coping mechanisms for stress. Furthermore, we observed a statistical trend in the differences in the following avoidance coping strategies: denial ($p = 0.066$), behavioral disengagement ($p = 0.084$), and self-blame ($p = 0.066$). In both phenotypes secure attachment correlated positively with seeking emotional support, whereas anxious-avoidant correlated negatively with this mechanism. In turn, anxious-ambivalent attachment in both phenotypes correlated negatively with acceptance and positively with behavioral disengagement and self-blame. Attachment patterns did not correlate with either BMI or the severity of hirsutism.

Conclusions. Patients with different PCOS phenotypes differ in their attachment patterns and stress coping strategies. Attachment styles are correlated with specific coping mechanisms for stress. Personalized approach that takes into account the clinical variability of PCOS and differences in psychological functioning should be applied.

Introduction

Polycystic ovary syndrome (PCOS) is a common condition at the intersection of gynecology and endocrinology, and is one of the primary causes of difficulties in getting pregnant [1]. Its prevalence varies between 5% and 20%, depending on the applied diagnostic criteria [1, 2]. PCOS is typically marked by symptoms such as oligomenorrhea and either biochemical or clinical hyperandrogenism (e.g., hirsutism, acne, alopecia) [1, 2]. Additionally, PCOS is associated with numerous long-term health risks, including type 2 diabetes (T2DM), cardiovascular disease, dyslipidemia, obesity, and endometrial cancer [1, 2]. Psychiatric conditions are also more frequently observed in patients with PCOS [3, 4].

Several diagnostic criteria for PCOS have evolved over time. In 1990, the National Institutes of Health (NIH) established that a diagnosis requires chronic oligo – or anovulation (OA) and clinical or biochemical hyperandrogenism (HA). The Rotterdam Criteria, introduced in 2003, added the presence of polycystic ovarian morphology (PCOM) on ultrasound as a third criterion, allowing a PCOS diagnosis if any two of the three criteria (OA, HA, PCOM) are met, after excluding other causes of hyperandrogenism. The Rotterdam Criteria also categorized PCOS into four phenotypes: A (OA+HA+PCOM), B (OA+HA), C (HA+PCOM), and D (OA+PCOM), with A and B considered as "classic" NIH and C and D as non-NIH phenotypes. In 2006, the Androgen Excess & PCOS Society emphasized the necessity of hyperandrogenism for diagnosis, excluding phenotype D. Currently, the diagnosis of PCOS primarily follows the Rotterdam criteria, while acknowledging the syndrome's heterogeneity [2].

In patients with NIH phenotypes, PCOS symptoms are generally more severe, and the risk of developing chronic diseases is higher [2]. Despite the evident heterogeneity of PCOS, there are only a few publications that focus on the psychological differences among patients with different phenotypes. Previous studies have not identified any differences in anxiety and depression among the various PCOS phenotypes [5, 6]. In another study, Bahadori et al. used the Hospital Anxiety and Depression Scale (HADS) and found no significant differences in anxiety and depression levels among patients with different PCOS phenotypes [7]. However, women with PCOS exhibited higher levels of anxiety and depression compared to healthy controls, with the greatest difference observed in those with phenotype B [8]. In turn, Bazarganipour et al. found that patients with phenotype A exhibited lower self-esteem and higher body dissatisfaction compared to those with other phenotypes [9].

The aforementioned articles focused rather on "symptoms" such as anxiety, depression and low self-esteem. Nevertheless, none of the studies mentioned above explored personality traits, attachment styles, stress coping, or other stable psychological variables over time.

Most publications on personality traits among PCOS patients involve studies comparing a PCOS group to a healthy control group. Scaruffi et al. using Rorschach test and the Millon Clinical Multiaxial Inventory-III demonstrated significant differences in personality traits between these groups [10]. In another study, they found that PCOS patients exhibited higher alexithymia compared to healthy controls [11]. Dutkiewicz

et al. reported that PCOS patients were less likely to use coping strategies such as active coping, seeking emotional support and institutional support, while they were more inclined to cope with stress through alcohol or drug use [12]. Simon et al. found that in PCOS patients, an anxious attachment style positively correlated with both hyperactivating (wishful thinking, emotional expression) and deactivating (problem avoidance, social withdrawal) coping mechanisms, whereas an avoidant attachment style was associated solely with deactivating coping [13]. To our knowledge, this was the only study addressing attachment styles among PCOS patients.

Over the years, the impact of patients' attachment patterns on the course and outcomes of treatment has been widely discussed. Strauss & Brenk-Franz emphasize the importance of attachment patterns in the context of treating somatic illnesses, providing the following points: (a) attachment as a factor influencing coping and illness behaviors, (b) attachment as a determinant of self-care, (c) attachment as a predictor of treatment adherence, (d) attachment as a key element in the doctor-patient relationship [14].

There are publications investigating the impact of attachment patterns on treatment outcomes in diabetes and hypertension, diseases that occur significantly more often in the course of PCOS [15–17]. However, as we have already mentioned, the literature regarding attachment patterns specifically in the PCOS group is very limited.

Considering the above points and noting the lack of research on attachment in the PCOS population, we decided to explore the dominant attachment styles and stress-coping strategies in patients with "classic" NIH and non-NIH PCOS phenotypes. Additionally, we examined the correlations between attachment and stress coping, as well as the correlations between psychological variables and the severity of PCOS symptoms.

Materials and methods

Study group

The study was performed among patients referred for endocrinological assessment at the Clinical Department of Gynecological Endocrinology and Gynecology of University Hospital. Data were collected from 170 patients, of whom 99 were diagnosed with PCOS according to the Rotterdam criteria. Ultimately, 94 patients with PCOS were included in the study, as 5 patients were excluded for not fully completing the questionnaires. The enrolled patients were divided into two groups: NIH phenotypes (OA+HA+PCOM, OA+HA, $n = 62$) and non-NIH phenotypes (HA+PCOM, PCOM+OA, $n = 32$). The criteria for participation in the study were as follows: age between 18 and 40, and PCOS diagnosis according to the Rotterdam criteria. Patients with other causes of hyperandrogenism were excluded from the study.

Clinical and biochemical assessment

Hirsutism was assessed using the modified Ferriman-Gallwey (F-G) scale, which evaluates nine body areas on a 0–4 point scale based on the distribution of terminal hair growth. F-G scores of 8 or higher indicate the presence of hirsutism [18].

Biochemical hyperandrogenism was identified using the Free Androgen Index (FAI), and total testosterone measured from fasting blood samples. The FAI was calculated for each patient using the formula: [Total testosterone (nmol/L) / SHBG (nmol/L) x 100]. Laboratory tests for 17-hydroxyprogesterone (17-OH-P), prolactin, TSH, FT3, FT4, and cortisol were conducted to rule out other endocrine disorders. A lipid profile was performed for each patient, and all patients underwent a gynecological examination.

Psychological measures

Attachment Styles Questionnaire (KSP) was used to measure attachment styles. The questionnaire measures attachment patterns in partner relationships [19]. It is was developed using the theoretical models proposed by Bowlby and Ainsworth [20, 21]. The questionnaire consists of 24 items forming 3 subscales, with 8 items in each. Each item is rated on a 7-point Likert scale. The questionnaire items pertain to the emotions that an adult typically feels when in a committed relationship. The subscales are: (1) secure attachment, (2) anxious-ambivalent attachment, and (3) anxious-avoidant attachment. Higher scores on each subscale reflect a greater presence of the corresponding attachment style in one's behavior [19].

Mini-Cope Inventory was used to measure stress coping. The Mini-Cope assesses dispositional coping with stress, which refers to a person's characteristic way of reacting and experiencing emotions in stressful situations. The questionnaire consists of 28 items forming 14 scales. The 14 stress coping strategies described in the questionnaire include: problem-focused coping (''active coping", "planning", "seeking instrumental support''), emotion-focused coping (''seeking emotional support'', ''acceptance'', ''sense of humor''), meaning-focused coping strategies (''positive re-evaluation", "return to religion''), and avoidance coping strategies (''self-distraction, "denial", "venting", "substance use", "behavioral disengagement", and "self-blame''). We used Polish adaptation of Mini-Cope [22].

Statistical analysis

Descriptive statistics summarized socio-demographic, clinical and laboratory data. Normality was assessed with the Shapiro-Wilk test. Student's t-test analyzed normally distributed data, while the Mann-Whitney *U*-test addressed non-normally distributed data. Categorical data were examined using Pearson's Chi-square test. Spearman's correlation coefficients assessed correlations between attachment and stress coping, as well as clinical and psychological variables. Statistical analysis was performed using PS Imago 9.0 (IBM SPSS Statistics).

Ethical approval

The study was approved by the Local Research Ethics Board (approval ID: 1072.6120.388.2020). All participants were provided with a thorough explanation of the study and gave their informed written consent prior to participation. All procedures adhered to the ethical standards set by the committee. The research was conducted in compliance with the Helsinki Declaration of 1975, as revised in 2000.

Results

Patients with NIH phenotypes did not differ from those with non-NIH phenotypes regarding place of residence, education, or marital status. However, patients with NIH phenotypes were statistically younger than those with non-NIH phenotypes ($p = 0.016$).

Patients with NIH phenotypes demonstrated higher hirsutism scores ($p = 0.050$), as well as higher levels of testosterone ($p < 0.001$), dehydroepiandrosterone sulfate (DHEA-S) ($p = 0.015$), and FAI ($p < 0.001$) compared to the non-NIH group. Additionally, NIH patients had higher levels of LDL cholesterol ($p = 0.01$) and total cholesterol ($p = 0.001$). The SHBG levels were lower in the NIH group ($p = 0.028$), and the difference in BMI between the two groups was close to statistical significance ($p = 0.087$).

NIH patients exhibited higher scores on the anxious-ambivalent attachment style ($p = 0.024$). Additionally, patients with "classic" PCOS phenotypes showed lower scores in the following stress coping mechanisms: active coping ($p = 0.033$), planning ($p = 0.022$), and acceptance ($p = 0.048$). Moreover, higher scores in the scales of denial ($p = 0.066$) and self-blame ($p = 0.066$) in the NIH group were close to statistical significance.

Among patients with the NIH phenotypes, a secure attachment positively correlated with seeking emotional support ($R = 0.442$; $p < 0.01$), seeking instrumental support ($R = 0.378$; $p < 0.01$) and self-distraction ($R = 0.252$; $p<0,05$). Anxious-ambivalent attachment correlated positively with denial ($R = 0.366$; $p < 0.01$), behavioral disengagement ($R = 0.405$; $p < 0.01$), self-blame ($R = 0.408$; $p < 0.01$), and negatively with acceptance ($R = -0.453$; $p < 0.01$) and positive reevaluation ($R = -0.253$; $p < 0.05$). Anxious-avoidant attachment correlated negatively with seeking emotional ($R = -0.270$; $p < 0.05$) and institutional support ($R = -0.253$; $p < 0.05$).

In patients with the non-NIH phenotypes, a secure attachment showed a positive correlation with seeking emotional support ($R = 0.451$; $p < 0.01$), and a negative correlation with behavioral disengagement ($R = -0.368$; $p < 0.05$) and self-blame ($R = -0.470$; $p < 0.01$). Anxious-ambivalent attachment correlated negatively with active coping ($R = -0.440$; $p < 0.05$) and acceptance ($R = -0.452$; $p < 0.01$), and positively with behavioral disengagement ($R = 0.430$; $p < 0.05$) and self-blame ($R = 0.662$; $p < 0.01$). Anxious-avoidant attachment correlated positively with self-blame ($R = 0.441$; $p<0.05$) and negatively with seeking emotional support ($R = -0,469$; $p < 0.01$).

In the NIH group, neither BMI nor hirsutism correlated with coping strategies or attachment. Among non-NIH patients, BMI positively correlated with behavioral disengagement ($R = 0.416$; $p < 0.05$). Moreover, in this group, F-G scores negatively

correlated with active coping ($R = -0.367$; $p < 0.05$) and planning ($R = -0.384$. $p < 0.05$), and positively with self-distraction ($R = 0.358$; $p < 0.05$), venting ($R = 0.428$; $p < 0.05$), substance use ($R = 0.351$; $p < 0.05$), and behavioral disengagement ($R = 0.392$; $p < 0.05$).

Discussion

The study aimed to explore attachment patterns and stress coping among patients with "classic" NIH phenotypes and non-NIH phenotypes. Additionally, patients were compared in terms of sociodemographic, clinical, and laboratory data.

Patients with different PCOS phenotypes did not differ regarding education level, marital status, and living location. However, patients with NIH phenotypes were statistically younger than those in the non-NIH group. This may be due to more severe PCOS-related symptoms, such as hirsutism or overweight, in the NIH group. In previous studies, these symptoms were reported by patients as having the most significant negative impact on their quality of life [23, 24]. The greater severity of these symptoms may therefore lead to earlier diagnostic consultations or referrals for diagnosis.

Patients from the NIH group tend to have higher BMI. Moreover, the NIH group exhibited higher total cholesterol and LDL cholesterol. These results align with prior studies and suggest a potentially elevated cardiometabolic risk in patients with "classic" phenotypes [25].

As we mentioned, PCOS is a complex condition with numerous body-related symptoms, often accompanied by infertility, and an increased risk of T2DM, hypertension, or endometrial cancer [1]. The risk of developing specific diseases varies depending on the PCOS phenotype [2, 25]. Lifestyle modification is one of the leading recommendations in the treatment of PCOS [26]. Adhering to these recommendations helps in controlling comorbid conditions associated with PCOS, such as type 2 diabetes and related insulin resistance [27], obesity, and hypertension [28]. Previous studies have shown that patients' attachment patterns are a key factor shaping the doctor-patient relationship and influencing treatment adherence. Ciechanowski et al. found that, in diabetic patients, a dismissing attachment style was linked to poorer glycemic control and self-care practices (such as foot care, diet, and exercise) [29]. Similarly, in a study of patients with hypertension in a primary care setting, insecure-dismissing attachment was associated with poorer treatment adherence [17].

In our study, the anxious-ambivalent attachment pattern was more prevalent among patients with "classic" PCOS phenotypes. While most research has not linked this attachment style to poorer treatment adherence, unlike the anxious-avoidant style [15–17], patients with anxious-ambivalent attachment tend to catastrophize symptoms [29] and use ambivalent, diffuse language when describing their situation [30]. They also seek more frequent and intense contact with their doctor or therapist, test boundaries, and strive to keep their therapist involved [31].

In a Canadian study by Ismayilova et al., 64% of patients expressed dissatisfaction with the information they received about PCOS from their physicians, 41% had consulted three or more doctors before receiving a diagnosis, and 42% reported not being provided with information on lifestyle management [32]. Additionally, many

patients felt their symptoms were dismissed by doctors [32]. A similar pattern emerged in another study, where patients shared comparable experiences [33]. However, that study also explored clinicians' perspectives, revealing challenges in convincing patients to follow recommendations and feelings of being overwhelmed when working with PCOS patients [33].

Costa-Cordella and Luyten introduced the concept of mentalizing-based healthcare, highlighting the importance of considering patients' attachment patterns and the potential for epistemic mistrust in those with chronic illnesses [34]. Epistemic trust refers to the ability to recognize information from others as credible, meaningful, and personally relevant, which is especially crucial in the doctor-patient relationship [35].

We can hypothesize that insecure attachment patterns and the associated epistemic mistrust among patients with PCOS may undermine the development of a secure doctor-patient relationship, complicating treatment for this group.

We also found that patients with NIH phenotypes were less likely to use problem-focused coping strategies, such as active coping and planning, as well as coping through acceptance. Additionally, patients with "classic" phenotypes were more likely to rely on avoidant coping mechanisms, such as denial, behavioral disengagement, and self-blame, although these results approached statistical significance. In a study comparing a general PCOS group with a healthy control group, PCOS patients were less likely to seek emotional and instrumental support and were more prone to cope with stress through substance use, such as alcohol or drug abuse [12].

In our study, we found that a secure attachment style in the NIH group positively correlated with seeking both emotional and instrumental support, while in the non-NIH group, this correlation was statistically significant only for emotional support. Additionally, in the "classic"" phenotypes, an avoidant attachment style was negatively associated with seeking both emotional and instrumental support. In contrast, for non-NIH phenotypes, the negative correlation was statistically significant only for emotional support. Our findings align with previous studies on the role of attachment patterns in treatment adherence and coping with illness, where patients with an avoidant attachment style were less likely to seek social support or help from their physicians [36].

The anxious-ambivalent attachment style in both groups was negatively correlated with acceptance and positively correlated with behavioral disengagement and self-blame. In the NIH group, this attachment style was also positively correlated with denial and negatively correlated with positive re-evaluation, while in the non-NIH group, it was negatively correlated with active coping.

From our psychodynamic perspective, we can hypothesize that PCOS patients with an ambivalent attachment style tend to engage in self-blame and behavioral disengagement during initial contact. However, in a long-term doctor-patient relationship, they may project feelings of guilt or helplessness onto the clinician while simultaneously expressing anger. It could be possible that the sense of being overwhelmed when working with PCOS patients described by Copp et. al. [33] could, at least in part, be related to specific attachment patterns presented by patients with PCOS and activated within the doctor–patient relationship.

In our study, we found that in the non-NIH group, problem-focused coping was negatively correlated with hirsutism while avoidant coping strategies were positively associated with hirsutism. Additionally, in this group, self-distraction was positively correlated with BMI. In the study by Dutkiewicz et al., stress coping mechanisms were not correlated with either BMI or hirsutism [12]. However, the authors examined the PCOS group as a whole without focusing on specific phenotypes. Our findings for the "classic" phenotypes were similar to above-mentioned results. The results in the non-NIH group suggest that these patients may cope with hirsutism using avoidance strategies. However, we did not observe this trend in the NIH group, where hirsutism was more severe. These results should be verified in the future studies with a larger study group.

This study has several limitations. First, it was conducted with a small sample size, which may limit the generalizability of the findings. Secondly, part of the results may be interpreted only as trends and require verification in the future studies.

Despite the aforementioned limitations, our study may be a valuable contribution to the research on the psychological aspects of PCOS. To our knowledge, this is the second study exploring attachment styles among PCOS patients, and the first investigating attachment styles among patients with different PCOS subgroups.

Conclusions and directions for future research

Attachment styles, and stress coping strategies can significantly affect a patient's ability to build trust and engage in treatment [37–40]. As we mentioned, PCOS is a chronic condition that can lead to various complications and often requires years of regular contact with healthcare providers. Therefore, studying these variables in women with PCOS can be relevant in the context of chronicity of PCOS and its concomitant conditions.

Further research on the psychological aspects of various PCOS phenotypes should focus on the concepts rooted in attachment theory like mentalization and epistemic trust. Epistemic trust is described as the ability to consider the knowledge from another person as trustworthy, relevant and generalizable [41]. In turn, epistemic mistrust is characterized by skepticism towards external information and perceiving them as potentially hostile or malevolent [42]. Epistemic trust/mistrust concept is widely discussed in the context of therapeutic relationship and psychopathology [42–44]. Investigating it in PCOS or other chronic conditions could provide new insights into the factors shaping the physician–patient relationship, potentially supporting the development of more personalized therapeutic options.

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Table 1. **Comparison of sociodemographic data between patients with NIH phenotypes and patients with non-NIH phenotypes**

	NIH phenotypes (n = 62)			non-NIH phenotypes (n = 32)		p
	N	%		N	%	
Education						
Primary	1	1.6		0	0	
Secondary	4	6.5		0	0	0.107
Postsecondary	31	50.0		11	34.4	
Higher	26	41.9		21	65.5	
Place of residence						
Village	21	33.9		7	21.9	
Small town	5	8.1		2	6.3	0.375
Medium-sized	11	17.7		4	12.5	
Big Cities	25	40.3		19	59.4	
Marital status						
Single	28	45.2		11	34.4	
Informal relationship	24	38.7		18	56.3	0.254
Married	10	16.1		3	9.4	

Table 2. **Comparison of clinical and laboratory data between patients with NIH and non-NIH phenotypes**

	NIH phenotypes (n = 62)			non-NIH phenotypes (n = 32)		p
	Mean	SD		Mean	SD	
Age	23.76	4.71		25.59	3.65	0.016
BMI	26.17	5.90		24.01	3.96	0.087
F-G score	11.69	5.80		9.22	6.82	0.050
Total testosterone (nmol/l)	1.99	0.73		1.40	0.66	<0.001
SHBG (nmol/l)	44.54	32.95		52.97	24.22	0.025
FAI	5.27	3.93		1.34	0.48	<0.001
DHEA-S (umol/l)	9.99	4.22		7.94	3.76	0.015
Cortisol (ug/dl)	14.85	4.51		13.92	4.83	0.368
Prolactin (uIU/ml)	320.00	134.38		390.34	255.98	0.215
TSH (uIU/ml)	2.29	1.24		2.15	1.04	0.777
Total cholesterol (mmol/l)	4.76	0.83		4.27	0.64	0.001
LDL (mmol/l)	2.52	0.87		2.10	0.49	0.01
HDL (mmol/l)	1.77	0.46		1.76	0.44	0.870
Triglicerides (mmol/l)	1.02	0.50		0.89	0.35	0.222
Viatmin D (ng/ml)	27.01	12.13		27.43	12.63	0.833

Table 3. **Comparison of coping strategies and attachment styles between patients with NIH and non-NIH phenotypes**

	NIH phenotypes (n = 62)			non-NIH phenotypes (n = 32)		p
	Mean/Median	SD/min-max		Mean/Median	SD/min-max	
Secure attachment	43.10	9.02		44.31	8.22	0.549
Anxious-ambivalent attachment	29.61	11.11		23.97	11.54	0.024
Anxious-avoidant attachment	19.58	9.88		17.72	7.96	0.472
Active coping	2	1-3		2.5	0.5-3	0.033
Planning	2	0-3		2.5	1-3	0.022
Seeking instrumental support	1.5	0-3		2	0-3	0.909
Seeking emotional support	2	0-3		2.25	0.5-3	0.159

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Positive re-evaluation	1.5	0-3		1.5	0-3	0.974
Acceptance	2	0-3		2	0.5-3	0.048
Sense of humour	1	0-2,5		1	0-2	0.738
Return to religion	0.5	0-3		0.5	0-3	0.900
Self-distraction	1.75	0.5-3		2	0.5-3	0.797
Denial	0.75	0-3		0.5	0-1.5	0.066
Venting	1.5	0-3		1.5	0-3	0.225
Substance use	0	0-3		0	0-2.5	0.816
Behavioral disengagement	1	0-3		0.5	0-2	0.084
Self-blame	1.5	0-3		1.5	0-3	0.066

Table 4. **Correlations between stress coping strategies and attachment styles in patients with NIH and non-NIH phenotypes**

	NIH phenotypes (n = 62)				Non-NIH phenotypes (n = 32)		
	SA	ANX-AMB	ANX-AVD		SA	ANX-AMB	ANX-AVD
Active coping	-0.136	-0.123	0.080		0.163	-0.440*	-0.331
Planning	0.122	-0.161	-0.139		0.050	-0.220	-0.061
Seeking instrumental support	0.376**	0.078	-0.253*		-0.006	-0.112	-0.013
Seeking emotional support	0.442**	-0.073	-0.270*		0.451**	-0.432	-0.469**
Positive re-evaluation	0.151	-0.255*	-0.221		0.039	0.312	-0.178
Acceptance	0.130	-0.453**	-0.223		0.151	-0.452**	-0.185
Sense of humour	0.049	-0.230	-0.046		-0.238	0.059	0.209
Return to religion	-0.031	0.013	-0.008		0.128	-0.305	-0.112
Self-distraction	0.252*	-0.01	-0.194		-0.021	-0.145	-0.076
Denial	-0.068	0.366**	0.163		-0.218	0.238	0.225
Venting	0.001	0.195	-0.028		-0.305	0.240	0.213
Substance use	0.002	0.210	0.108		-0.318	0.257	0.235
Behavioral disengagement	0.038	0.405**	0.149		-0.368*	0.430*	0.276
Self-blame	-0.104	0.408**	0.192		-0.470**	0.662**	0.441*

*p <0.05; **p <0.01

Table 5. **Correlations between psychological variables, BMI, and F-G score among patients with NIH and non-NIH phenotypes.**

	NIH phenotypes (n = 62)				Non-NIH phenotypes (n = 32)		
	Age	BMI	F-G		Age	BMI	F-G
Active coping	0.131	-0.101	0.061		0.179	0.089	-0.367*
Planning	0.243	-0.065	0.182		0.173	-0.103	-0.384*
Seeking instrumental support	-0.055	-0.016	0.150		0.247	-0.236	-0.239
Seeking emotional support	-0.169	-0.018	0.129		0.183	-0.006	0.025
Positive re-evaluation	0.020	0.038	0.061		-0.071	-0.003	0.023
Acceptance	0.039	-0.124	-0.049		0.122	-0.061	-0.012
Sense of humour	-0.387**	0.056	0.034		-0.110	0.093	0.218
Return to religion	0.285*	-0.136	0.088		-0.071	0.287	-0.015
Self-distraction	-0.262*	-0.030	0.146		0.308	0.416*	0.358*
Denial	-0.279*	-0.033	-0.091		-0.122	0.221	0.116
Venting	-0.091	0.071	-0.096		0.273	-0.199	0.428*
Substance use	-0.144	-0.111	-0.133		0.237	-0.172	0.351*
Behavioral disengagement	-0.103	-0.059	-0.142		-0.166	0.235	0.392*
Self-blame	-0.025	-0.208	-0.086		0.131	-0.138	0.113
Secure attachment	0.118	-0.007	0.013		-0.085	0.011	-0.012
Anxious-ambivalent attachment	-0.115	0,095	-0.033		-0.163	-0.195	0.068
Anxious-avoidant attachment	-0.115	-0.059	-0.058		0.110	0.043	0.045

*p <0.05; **p <0.01

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