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Role of Parenting Perceptions, Alexithymia, and Attachment in Chronic Pain: A Case–Control Study

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ABSTRACT

This study examined the relationship among alexithymia, attachment styles, and perceived parenting in individuals with chronic pain (CP). This case–control study included 63 patients with CP and 62 healthy individuals. Participants completed questionnaires on sociodemographic and clinical data, the Young Parenting Scale (YPS), Experiences in Close Relationships Inventory (ECRI), Toronto Alexithymia Scale (TAS), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Compared with controls, patients with CP reported statistically significantly higher TAS scores (median [IQR] = 50 [44–55] vs. 43 [36–48], p<0.001), indicating greater difficulty in identifying and expressing emotions. They also showed significantly higher attachment anxiety levels (69 [55–86] vs. 60 [47–71], p=0.035). Regarding parenting perceptions, CP patients scored higher on several negative subscales: for mothers—Belittling/Criticizing, Permissive/Boundless, Pessimistic/Worried, and Restricted/Emotionally Inhibited; for fathers—Exploitative/Abusive, Permissive/Boundless, and Emotionally Depriving. These findings suggest that individuals with CP experience greater emotional dysregulation, higher attachment anxiety, and more negative early caregiving experiences, especially maternal criticism and paternal abuse or emotional deprivation. Early negative relational environments and difficulties in emotional regulation may contribute to the development or persistence of CP. Addressing these factors could enhance the effectiveness of psychological interventions. Further research is needed to investigate the underlying mechanisms in larger cohort studies.

Keywords: Chronic pain, alexithymia, object attachment, parenting.

ÖZ

Kronik Ağrıda Ebeveynlik Algısı, Aleksitimi ve Bağlanmanın Rolü: Bir Olgu-Kontrol Çalışması

Bu çalışma, kronik ağrı tanısı alan bireylerde aleksitimi, bağlanma stilleri ve algılanan ebeveynlik arasındaki ilişkiyi incelemeyi amaçlamıştır. Bu olgu-kontrol çalışmasına 63 kronik ağrı tanılı hasta ve 62 sağlıklı birey katıldı. Katılımcılar; Sosyodemografik ve Klinik Bilgi Anketi, Young Ebeveynlik Ölçeği (YEO), Yakın İlişkilerde Yaşantılar Envanteri (YİYE), Toronto Aleksitimi Ölçeği (TAÖ), Beck Depresyon Envanteri (BDE) ve Beck Anksiyete Envanterini (BAE) yanıtladı. Kronik ağrı hastaları, kontrol grubuna kıyasla istatistiksel olarak anlamlı düzeyde daha yüksek TAÖ puanları bildirdi (ortanca [çeyrekler arası aralık]=50 [44-55] vs. 43 [36-48], p<0,001); bu da duyguları tanıma ve ifade etmede daha fazla güçlük yaşadıklarını göstermektedir. Ayrıca kronik ağrı grubunun bağlanma anksiyetesi (69 [55-86] vs. 60 [47-71], p=0,035), puanları da

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istatistiksel olarak anlamlı yüksek bulundu. Olumsuz ebeveynlik algısına ilişkin olarak kronik ağrı hastaları; annelikte Küçümseyici/Kusur Bulucu, Aşırı İzin Verici/Sınırsız, Kötümser/Endişeli ve Kapalı/Duygularını Bastıran alt ölçeklerinde; babalıkta ise Sömürücü/İstismar Edici, Aşırı İzin Verici/Sınırsız ve Duygusal Yoksun Bırakıcı alt ölçeklerinde anlamlı olarak daha yüksek puanlar aldı. Bulgular, kronik ağrı hastalarının daha fazla duygusal düzenleme güçlüğü, yüksek bağlanma anksiyetesi ve daha olumsuz erken dönem ebeveynlik algısı deneyimlediklerini göstermektedir. Özellikle anneden algılanan eleştirel tutum ile babadan algılanan istismar ve duygusal yoksunluk dikkat çekicidir. Erken dönemde bakım verenle kurulan olumsuz ilişkiler ve duygusal işlevsizlik, kronik ağrının gelişiminde veya sürdürülmesinde rol oynayabilir. Bu faktörlere yönelik müdahaleler, psikolojik tedavilerin etkinliğini artırabilir. Gelecek araştırmalarda daha geniş örneklemlerle yürütülecek kohort çalışmaların nedensel ilişkileri incelemesi önerilmektedir.

Anahtar Kelimeler: Kronik ağrı, aleksitimi, bağlanma davranışı, ebeveynlik.

INTRODUCTION

Chronic pain (CP) that persists for at least three months is defined as chronic (Merskey & Bogduk, 1994). CP can result from various biological processes, such as joint degeneration, inflammation, tumor growth (cancer pain), and nerve damage affecting different body parts. It may also occur in multisymptom conditions (Treede et al, 2015). A population-based study covering both developing and developed countries found that the prevalence of CP ranged from 37% to 40%, and it was more common in women. The comorbidity of depression and anxiety disorders was found to be 1.6 to 2.4 times higher among individuals with CP than among those without pain (Tsang et al, 2008). It is one of the leading causes of disability, increased medical costs, and lost productivity (Gaskin & Richard, 2012; James et al, 2018). It is also associated with poor general health and reduced quality of life (Soriano-Maldonado et al, 2015). Fibromyalgia syndrome (FMS) and rheumatoid arthritis (RA) are chronic conditions frequently associated with persistent pain. FMS is characterized by widespread musculoskeletal pain, fatigue, sleep disturbances, and cognitive difficulties, with an estimated prevalence of 1%–5% (Smith et al, 2011). RA is an autoimmune inflammatory disorder primarily affecting joints and surrounding tissues, with a lifetime prevalence of 0.5%–1% (Suzuki & Yamamoto, 2015; Prados et al, 2013). Both disorders are more common in women (Prados et al, 2013; Suzuki & Yamamoto, 2015) and share not only somatic symptoms but also psychological features. Notably, depression and anxiety are frequently observed in individuals with FMS and RA, suggesting that psychogenic factors may contribute to the onset and course of these conditions (Fiest et al, 2017; McWilliams et al, 2008).

Various factors—including neurobiological, psychological, and social influences—can contribute to the prolonged pain experience (Gatchel et al, 2007). CP encompasses sensory, cognitive, and affective components (Melzack & Katz, 2013). Therefore, understanding its psychogenic aspects and their relationship with etiology remains an important area of interest. Adverse experiences and unfavorable parenting styles during infancy, childhood, and adolescence—periods of heightened vulnerability to environmental stressors—are increasingly recognized as significant contributors to CP development and persistence (Anno et al, 2015; Sachs-Ericsson et al, 2009). Clinical research suggests that such early-life stressors can disrupt brain and bodily development, thereby increasing the risk of CP later in life (Jones et al, 2009; Noll-Hussong et al, 2010). The association between CP and early-life adversity, including child–parent interactions and attachment styles, has recently attracted substantial research attention. Studies have reported a link between CP and insecure attachment styles, which have been implicated in the development of CP conditions and reduced adherence to treatment (Peñacoba et al, 2018; Romeo et al, 2020). Attachment theory explores how early interactions with caregivers shape later interpersonal behaviors and psychological functioning. The unique bond formed between an infant and their caregiver significantly influences long-term psychological and physical well-being (Fraley & Shaver, 2000).

The association between CP and alexithymia—defined as difficulty in identifying and describing subjective emotional experiences, limited imagination, and an externally oriented cognitive style (Porcelli & Taylor et al, 2018)—has been recognized for many years (Di Tella et al, 2017; Romeo et al, 2020). Inadequate parenting, insecure attachment, and adverse early-life experiences are also associated with alexithymic traits in adulthood, similar to those observed in individuals with CP (Gil et al, 2008; Kooiman et al, 2004; Montebarocci et al, 2004). However, within the context of CP, the available data and the number of studies remain limited, making it difficult to draw definitive conclusions about the relationship between different dimensions of perceived parenting styles, attachment styles, and alexithymia.

This case–control study aimed to examine the relationship between alexithymia, attachment styles, and various perceived parenting styles in patients with CP. We hypothesize that patients with CP will differ from healthy controls in terms of alexithymia levels, that scores on attachment subdimensions reflecting secure attachment will differ between the two groups, and that negative parenting subdimensions assessed by the Young Parenting Inventory will also show significant differences. Additionally, we hypothesize a positive relationship between alexithymia and the subdimensions of perceived negative parenting.

METHOD

Sample

This case–control study included patients with CP and a control group. The CP group consisted of individuals diagnosed with fibromyalgia syndrome (FMS) or RA in remission according to the American College of Rheumatology 2010 criteria (Wolfe et al, 2010), who visited the Rheumatology and Physical Medicine and Rehabilitation departments of Başkent University Hospital during the first six months of the study period. Patients were consecutively recruited. Over a six-month period, 41 patients were diagnosed with FMS, of whom 33 volunteered and were included in the study. Additionally, 30 patients with RA in remission were recruited. The control group consisted of 62 individuals without CP or somatization symptoms, similar to the CP patients in terms of age, gender, and education level. They were selected from the community using the snowball sampling method. FMS and RA diagnoses were confirmed by a physical medicine specialist and a rheumatologist. Participants in the control group were screened for CP and somatization symptoms to ensure they did not meet the criteria for FMS, RA, or other CP conditions.

The exclusion criteria for both the patient and control groups included being younger than 18 or older than 65 years of age, illiteracy, significant visual or hearing impairments that could interfere with communication, severe psychiatric disorder, or a history of traumatic brain injury. Participants with severe psychiatric disorders were excluded based on clinical evaluations conducted by a psychiatrist. A semi-structured clinical interview guided by the diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM–IV–TR) was used to assess major psychiatric conditions such as psychotic disorders, bipolar disorder, and substance use disorders.

Measurements

Sociodemographic and Clinical Variables

The researchers developed a questionnaire to collect sociodemographic and clinical data in accordance with the study objectives. The questionnaire included questions on age, gender, marital status (married, single, divorced, widowed), education level (high school or less [≤11 years], university or master's degree [>11 years]), employment status, current psychiatric disorders, and history of psychiatric illness.

Parenting Perceptions

Perceptions of parenting were assessed using the Turkish version of the Young Parenting Scale (YPS). This 72-item scale evaluates various parental behaviors that are believed to contribute to the formation of early maladaptive schemas. It is a six-point Likert-type scale. The Turkish version of the YPS includes the following subdimensions for both mothers and fathers: Normative, Belittling/Criticizing, Exploitative/Abusive, Overprotective/Anxious, Conditional/Achievement-Focused, Permissive/Boundless, Pessimistic/Worried, Emotionally Depriving, Punitive, and Restricted/Emotionally Inhibited. The Cronbach's alpha reliability coefficients for the Turkish version ranged from α=0.53 to 0.86 for the YPS–Mother form and from α=0.61 to 0.88 for the YPS–Father form (Soygüt et al, 2008).

Attachment Dimensions

Attachment dimensions were measured using the Turkish version of the Experiences in Close Relationships Scale. This 36-item scale assesses two fundamental attachment dimensions: attachment anxiety and attachment avoidance. Each item is rated on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Cronbach's alpha coefficients for the Turkish version were α=0.90 for attachment avoidance and α=0.86 for attachment anxiety (Sümer, 2006).

Alexithymia

Alexithymia was assessed using the Turkish version of the Toronto Alexithymia Scale (TAS-20), a 20-item self-report questionnaire rated on a 5-point Likert scale. The scale includes three subdimensions: TAS-1: Difficulty identifying feelings, TAS-2: Difficulty describing feelings, and TAS-3: Externally oriented thinking (Güleç et al, 2009).

Depression Level

The Turkish version of the Beck Depression Inventory (BDI), which assesses the physical, emotional, cognitive, and motivational symptoms of depression, was used to measure depressive symptoms (Hisli, 1989).

Anxiety Level

The Turkish version of the Beck Anxiety Inventory (BAI), which measures the frequency and severity of anxiety symptoms experienced by individuals, was used to assess anxiety symptoms (Ulusoy et al, 1998).

Statistical Analysis

All analyses were performed using IBM SPSS Statistics. Descriptive statistics for the data are presented as frequency and percentage for categorical variables and as median and interquartile range (IQR) for continuous variables, with appropriate tables organized. The normality of the continuous variables was tested using the Kolmogorov–Smirnov test and visual methods. Since continuous variables did not conform to a normal distribution, the Mann–Whitney U test was used to compare continuous variables. Pearson's chi-square and Fisher's exact tests were used to compare categorical variables. The correlations among attachment, alexithymia, parenting perceptions, depression, and anxiety were examined using Spearman's correlation coefficient. The correlation was considered weak if rho ranged from ±0.1 to ±0.29, moderate if between ±0.30 and ±0.49, and strong if between ±0.50 and ±1.0 (Cohen, 2013). Statistical significance was determined at a p-value of <0.05.

A post hoc power analysis was performed based on the study's main findings. Using G*Power (version 3.1), with a total sample size of 125 participants (n=63 in the CP group and n=62 in the control group), the study had a power of 0.81 to detect a medium effect size (Cohen's d=0.5) at an alpha level of 0.05. This indicates that the sample size was sufficient to detect significant group differences with adequate statistical power. Pairwise comparisons of the TAS, BAI, and BDI revealed medium effect sizes (r≈0.31), indicating robust differences between the CP and control groups, with an estimated statistical power exceeding 80%. The ECR-R Anxiety subscale yielded a small effect size (r≈0.19), with a corresponding power estimate of approximately 60%–70%, reflecting a statistically significant but comparatively modest group difference. Furthermore, several subdimensions of perceived parenting demonstrated small to medium effect sizes (r≈0.18–0.27), reinforcing the sample size's adequacy in detecting clinically meaningful variations in parental representations between groups.

Procedure

This study was approved by the Başkent University Medical and Health Sciences Research Board and the Non-Interventional Clinical Research Ethics Committee (Project No: KA13/21). All participants provided informed consent, and the study was conducted in accordance with the principles of the Declaration of Helsinki.

RESULTS

The study included 125 participants, with a mean age of 40±10 years. Most participants were female (87%) and married (79%). More than half were employed (58%) and held at least a university degree (54%).

Table 1. Comparison of the sociodemographic and clinical characteristics

Characteristic	Chronic pain (n=63) n (%)	Control (n=62) n (%)	p
Age, years, median (IQR)	40 (31–50)	38 (33–46)	0.28[a]
Sex			0.97[b]
Female	55 (87.3)	54 (87.1)	
Male	8 (12.1)	8 (12.9)	
Education level			0.32[b]
High school or less	32 (50.8)	26 (41.9)	
University/master's degree	31 (49.2)	36 (58.1)	
Employment status			**<0.001[b]**
Non-employed	37 (58.7)	16 (25.8)	
Employed	26 (41.3)	46 (74.2)	
Marital status			0.96
Married	50 (79.4)	49 (79)	
Single/divorced/widowed	13 (20.6)	13 (21)	
Psychiatric history			**<0.001[c]**
Yes	25 (39.7)	0 (0)	
No	38 (60.3)	62 (100)	
Current psychiatric diseases			
Yes	12 (19)	0 (0)	**<0.001[c]**
No	51 (81)	62 (100)	

a: Mann-Whitney U Test; b: Pearson Chi-Square Test; c: Fisher's Exact Test; IQR: Interquartile range.

A Mann–Whitney U test revealed no significant difference in the median (interquartile range, IQR) age between the CP and control groups (40 [31–50] vs. 38 [33–46], Z=-1.08, p=0.28). The Pearson chi-square test revealed no significant differences in sex, education level, or marital status between the two groups. However, the percentage of employed individuals was higher in the control group (72% vs. 41.3%, χ^2=13.86, p<0.001). Fisher's exact test results indicated that participants with CP had a higher prevalence of both current psychiatric disorders (19% vs. 0, χ^2=13.06, p<0.001) and a history of psychiatric disorders (39.7% vs. 0, χ^2=30.75, p<0.001). The results are presented in Table 1.

As shown in Table 2, the Mann–Whitney U test revealed statistically significant differences between the CP group and the control group in median (IQR) scores of alexithymia (50 [44–55] vs. 42 [36–48], Z=-4.65, p<0.001), depression (12 [8–19] vs. 6 [3–11], Z=-5.53, p<0.001), and anxiety (13 [7–21] vs. 5 [3–10],

Table 2. Comparison of the alexithymia, attachment, depression, and anxiety scores

Scale	Chronic pain (n=63) Median (IQR)	Control (n=62) Median (IQR)	p
TAS	50 (44–55)	42 (36–48)	**<0.001**
ECRI_ avoidance	60 (40–73)	50 (34–76)	0.23
ECRI_ anxiety	69 (55–86)	60 (47–71)	**0.03**
BAI	13 (7–21)	5 (3–10)	**<0.001**
BDI	12 (8–19)	6 (3–11)	**<0.001**

Mann–Whitney U Test. IQR: Interquartile range; TAS: Toronto Alexithymia Scale; ECRI: Experiences in Close Relationships Inventory; BAI: Beck Anxiety Inventory; BDI: Beck Depression Inventory.

Z=-4.32, p<0.001). A statistically significant difference in median (IQR) attachment anxiety scores was observed between the groups (69 [55–86] vs. 60 [47–71], Z=-2.10, p=0.035), whereas no significant difference was observed in attachment avoidance scores (60 [40–73] vs. 50 [34–76], Z=-1.19, p=0.235).

When the parenting perceptions of the CP and control groups were compared, no significant differences were found in the median scores of the Normative, Overprotective/Anxious, Conditional/Achievement-Focused, and Punitive subdimensions of the YPS. In contrast, the Mann–Whitney U test revealed statistically significant differences between the CP group and the control group in median (IQR) scores of maternal Belittling/Criticizing (12 [9–17.5] vs. 10 [9–13], Z=-2.01, p=0.044), maternal Permissive/Boundless (9 [6–13] vs. 7 [6–10], Z=-2.46, p=0.014), maternal Pessimistic/Worried (7 [5–11] vs. 6 [5–9], Z=-2.05, p=0.040), maternal Restricted/Emotionally Inhibited (9.5 [7–11] vs. 8 [7–9], Z=-2.23, p=0.026), paternal Exploitative/Abusive (7 [7–10] vs. 7 [7–7], Z=-2.99, p=0.003), paternal Permissive/Boundless (9 [6–14] vs. 8 [6–11], Z=-2.84, p=0.004), and paternal Emotionally Depriving (21 [14–26] vs. 17 [12–21], Z=-2.42, p=0.016) dimensions. The results are presented in Table 3.

The relationship between alexithymia, attachment subdimensions, and parenting subdimensions was assessed using a Spearman correlation test. Alexithymia showed a significant moderate positive correlation with both attachment anxiety (ρ=0.429, p<0.01) and attachment avoidance (ρ=0.303, p<0.01). The results also revealed a low positive correlation between alexithymia and the Belittling/Criticizing (ρ=0.281, p<0.01), Permissive/Boundless (ρ=0.226, p<0.05), and Emotionally Depriving (ρ=0.280, p<0.01) subdimensions for mothers, as well as the Exploitative/Abusive (ρ=0.202, p<0.05) and Restricted/Emotionally Inhibited (ρ=0.274, p<0.01) subdimensions for fathers, and the Overprotective/Anxious parenting style (mother: ρ=0.232, p<0.01; father: ρ=0.228, p<0.01).

A moderate positive correlation was found between alexithymia and the maternal Restricted/Emotionally Inhibited subdimension (ρ=0.402, p<0.01), as well as the paternal Emotionally Depriving (ρ=0.319, p<0.01) and Pessimistic/Worried (ρ=0.371, p<0.01) subdimensions. Additionally, a strong positive correlation was observed between alexithymia and the maternal Pessimistic/Worried subdimension (ρ=0.583, p<0.01).

Attachment anxiety showed a low positive correlation with the maternal Normative (ρ=0.213, p<0.05) and Restricted/Emotionally Inhibited (ρ=0.296, p<0.01) subdimensions, as well as the paternal Belittling/Criticizing (ρ=0.204, p<0.05), Exploitative/Abusive (ρ=0.226, p<0.05), Permissive/Boundless (ρ=0.225, p<0.05), Emotionally Depriving (ρ=0.233, p<0.05), and Punitive (ρ=0.294, p<0.01) subdimensions.

A moderate positive correlation was found between attachment anxiety and the paternal Normative (ρ=0.346, p<0.05) and maternal Pessimistic/Worried (ρ=0.354, p<0.01) subdimensions.

Additionally, attachment anxiety was strongly positively correlated with the paternal Pessimistic/Worried subdimension (ρ=0.554, p<0.01).

Attachment avoidance showed a low positive correlation with both Pessimistic/Worried parenting (mother: ρ=0.229, p<0.05; father: ρ=0.250, p<0.05) and the maternal Restricted/Emotionally Inhibited subdimension (ρ=0.234, p<0.05). However, it showed a low negative correlation with the maternal Normative (ρ=-0.220, p<0.05) and Conditional/Achievement-Focused (ρ=-0.185, p<0.05) subdimensions. The results are presented in Table 4.

DISCUSSION

This study aimed to examine the relationship among alexithymia, attachment styles, and perceived parenting in patients with CP. Our findings showed that alexithymia and attachment anxiety are significantly associated with CP. Specific parenting styles—such as Belittling/Criticizing, Pessimistic/Worried, Restricted/Emotionally Inhibited, and Permissive/Boundless mothering, and Exploitative/Abusive, Emotionally Depriving, and Permissive/Boundless fathering—were also more commonly reported by patients with CP.

Attachment

Patients with CP reported higher attachment anxiety, emotional sensitivity, fear of abandonment, and difficulty managing relational stress. These interpersonal difficulties

Table 3. Comparison of parental perception scores between the study groups

YPS subdimension	Chronic pain (n=63) Median (IQR)	Control (n=62) Median (IQR)	p
Normative			
Mother	34 (21–47)	28 (24–39)	0.39
Father	34 (24–48)	37 (44–28)	0.72
Belittling/criticizing			
Mother	12 (9–17.5)	10 (9–13)	**0.04**
Father	12 (9–18)	10 (9–13)	0.21
Exploitative/abusive			
Mother	7 (7–7)	7 (7–7)	0.99
Father	7 (7–10)	7 (7–7)	**0.003**
Overprotective/anxious			
Mother	21 (16–26)	19 (15–24)	0.21
Father	17 (14–26)	17 (15–21)	0.15
Conditional/achievement-focused			
Mother	17 (13–20)	14 (12–19)	0.12
Father	17 (12–22)	16 (12–22.5)	0.82
Permissive/boundless			
Mother	9 (6–13)	7 (6–10)	**0.01**
Father	9 (6–14)	8 (6–11)	**0.004**
Pessimistic/worried			
Mother	7 (5–11)	6 (5–9)	**0.040**
Father	8 (5–12)	6 (5.5–8)	0.090
Emotionally depriving			
Mother	16 (12–22)	14 (12–20)	0.230
Father	21 (14–26)	17 (12–21)	**0.016**
Punitive			
Mother	8 (7–10)	8 (7–9)	0.223
Father	9 (6–11)	9 (7–10.5)	0.609
Restricted/emotionally inhibited			
Mother	9.5 (7–11)	8 (7–9)	**0.026**
Father	10 (7–13)	9 (7–13)	0.788

Mann–Whitney U Test. YPS: Young Parenting Scale; IQR: Interquartile range.

may intensify physiological arousal and maladaptive coping, contributing to persistent pain. Previous studies have similarly linked attachment anxiety with emotional dysregulation, heightened threat sensitivity, and increased pain perception (Borthwick et al, 2024; McWilliams & Asmundson, 2007). Although attachment avoidance was not significantly associated with CP in our sample, previous studies have found that both anxiety and avoidance are related to pain (Peñacoba et al, 2018; Romeo et al, 2020). One possible explanation for this discrepancy may lie in the differences in how attachment was measured across studies. In the present study, attachment was assessed dimensionally (i.e., as anxiety and avoidance dimensions), whereas some previous research has classified attachment into four

Table 4. Correlations among alexithymia, attachment, and parenting variables

Scale	TAS (ρ)	ECRI-anxiety (ρ)	ECRI-avoidance (ρ)
TAS	–		–
ECRI-Anxiety	**0.429****	–	–
ECRI-Avoidance	**0.303****	–	–
BDI	-0.074	**0.459****	**0.403****
BAI	0.006	**0.283****	**0.315****
Normative-M	0.036	**0.213***	**-0.220***
Normative-F	0.172	**0.346***	-0.36
Belittling/criticizing-M	**0.281****	0.091	-0.032
Belittling/criticizing-F	0.174	**0.204***	0.089
Exploitative/abusive-M	0.029	-0.052	0.069
Exploitative/abusive-F	**0.202***	**0.226***	0.091
Overprotective/anxious-M	**0.232****	0.056	0.097
Overprotective/anxious-F	**0.228****	0.043	0.149
Conditional/achievement-focused-M	0.064	0.029	**-0.185***
Conditional/achievement-focused-F	0.149	0.118	-0.146
Permissive/boundless-M	**0.226***	0.168	-0.076
Permissive/boundless-F	0.114	**0.225***	-0.025
Pessimistic/worried-M	**0.583****	**0.354****	**0.229***
Pessimistic/worried-F	**0.371****	**0.554****	**0.250***
Emotionally depriving-M	**0.280****	-0.069	0.026
Emotionally depriving-F	**0.319***	**0.233***	0.011
Punitive-M	0.060	0.165	-0.066
Punitive-F	0.059	**0.294****	0.034
Restricted/emotionally inhibited-M	**0.402****	**0.296****	**0.234***
Restricted/emotionally inhibited-F	**0.274****	0.175	0.023

*: P<0.05; **: P<0.01; ρ: Spearman's rank correlation coefficient; TAS: Toronto Alexythmia Scale; ECRI: Experiences in Close Relationships Inventory; BAI: Beck Anxiety Inventory; BDI: Beck Depression Inventory.

categories (secure, anxious, avoidant, and disorganized) using categorical measures. Such methodological differences in the measurement tools may account for the inconsistent findings. Future longitudinal research using standardized and comparable attachment measures could help clarify these associations. Insecure attachment can also hinder treatment adherence, reinforcing the need for therapeutic interventions that address attachment-related vulnerabilities (Bennett et al, 2011; Ciechanowski et al, 2001). Insecure attachment, therefore, may serve as a meaningful focus for psychological intervention. Cognitive-behavioral therapy, which has strong empirical support in CP treatment, has been shown to be effective in helping individuals with attachment anxiety reframe maladaptive thoughts and develop healthier coping mechanisms for emotional distress. Pain management can help patients develop more adaptive coping strategies, enhance emotional awareness, and reduce pain catastrophizing tendencies (Ciechanowski et al, 2003; Foster et al, 2018).

Alexithymia

Consistent with the existing literature (Gil et al, 2008; Romeo et al, 2020), our results showed higher alexithymia scores among patients with CP. This supports the theory that emotional awareness difficulties may lead to the somatization and bodily expression of affect. Alexithymic traits—such as difficulty identifying or articulating emotions—may contribute to CP via dysregulated stress responses and poor emotional processing.

Parenting Perceptions

Perceptions of parenting were notably different in the CP group. Negative maternal characteristics, such as pessimism, belittling, and emotional inhibition, and negative paternal traits, such as abuse and emotional deprivation, were more prevalent. These parental styles may fail to buffer children's anxiety and instead become sources of emotional distress. Inconsistent or emotionally unavailable early interactions may hinder the development of trust, emotion regulation, and stress resilience. Although no study has used the YPS for direct comparison, findings from other parenting instruments, such as the Parental Bonding Instrument, reveal similar trends. For instance, Romeo et al. (2020) and Gil et al. (2008) both reported decreased parental care and increased overprotection in patients with fibromyalgia, suggesting early relational environments marked by coldness, dismissiveness, and intrusiveness. Similarly, research evaluating early maladaptive schemas in patients with CP found increased levels of Dependence/Incompetence, Vulnerability to Harm or Illness, and Negativity/Pessimism schemas, as well as elevations in the Impaired Autonomy and Performance schema domain. These findings support our results, suggesting that early-life experiences may play a significant role in the psychological profiles of individuals with CP and carry significant relevance for clinical practice (Saariaho et al., 2015). Schema therapy, which targets early maladaptive schemas rooted in dysfunctional attachment and parenting experiences, offers a tailored approach to patients with CP by addressing persistent cognitive and emotional patterns associated with vulnerability and distress (Yousefzade et al, 2020).

Additionally, significant associations were found between alexithymia and parenting perceptions. The strongest correlations emerged with perceptions of a Pessimistic/Worried and Restricted/Emotionally Inhibited mother. These patterns may indicate learned emotional suppression or avoidance in the familial context, as postulated by Stoudemire (1991), who suggested that alexithymia may develop through social learning within the family system. Our findings are also consistent with those of Thorberg et al. (2011), who found moderate associations between alexithymia and parental overprotection.

The co-occurrence of negative parenting perceptions and alexithymia in the CP group suggests a possible mediating role for alexithymia between early-life adversity and CP. However, given the sample size, no formal mediation analysis could be conducted in this study.

A moderate-to-strong association was found between alexithymia and attachment anxiety and a moderate association with attachment avoidance. These findings support previous work that identified insecure attachment as a predictor of alexithymia (Ciechanowski et al, 2002; Peñacoba et al, 2018; Zhang et al, 2024). Individuals with insecure attachment often lack adequate emotional modeling and may adopt avoidant strategies, focusing on external facts while neglecting internal states (Feeney, 1999; Winterheld, 2016). Emotional neglect in childhood may set the stage for alexithymic patterns in adulthood.

Limitations

The study's limitations include a relatively small sample size, which limited advanced statistical modeling. The female predominance, while representative of CP populations, may limit generalizability. The single-center design also restricts the findings' broader applicability. The snowball sampling method for the control group may have introduced bias due to the lack of diversity. All data were self-reported, which raises recall bias concerns, especially for retrospective childhood experiences.

Strengths

This study uniquely integrates alexithymia, attachment styles, and detailed parenting perceptions in the context of CP. The use of a multidimensional assessment of early relational experiences contributes to a deeper understanding of the psychological vulnerabilities of this population.

CONCLUSION

Our findings highlight the significant associations between CP, attachment anxiety, alexithymia, and perceived parenting styles. Individuals with CP exhibited heightened attachment anxiety and greater difficulty in recognizing and expressing emotions, as reflected in elevated levels of alexithymia. Negative perceptions of maternal and paternal behaviors—particularly emotionally inhibiting, pessimistic, belittling, and overprotective parenting—appear to play a crucial role in shaping emotional regulation difficulties in adulthood. These results align with existing theories that early relational experiences and parental influences contribute to the development of alexithymic traits, which may mediate the relationship between childhood emotional environments and CP.

The strong associations between insecure attachment, alexithymia, and CP underscore the importance of psychological interventions aimed at improving emotional regulation, cognitive flexibility, and interpersonal functioning. Person-centered assessments are essential for identifying appropriate treatment goals. Cognitive-behavioral therapy, mindfulness-based interventions, schema therapy, and trauma-focused techniques may help patients modify maladaptive patterns rooted in early-life experiences, enhance emotional expression, and develop more adaptive coping strategies for managing CP. Future research should employ cohort designs and larger, more diverse samples to further explore causal relationships between early-life experiences, emotional regulation, and CP, using structural models to test the mediating roles of attachment and parenting.

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