



Attachment patterns, self-compassion, and coping strategies in patients with chronic pain

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Abstract

Introduction: In the recent year's literature, attachment insecurity is described as a vulnerability factor among patients with chronic pain, associated with poor pain coping, anxiety, depression, catastrophizing, greater pain intensity, and disability. Self-compassion, on the other hand, is described as a protective factor, associated with lower levels of negative affect, catastrophizing, depression, and anxiety in patients with chronic pain.

Methods: In this study, we aim to explore the association between attachment, self-compassion quality, and coping strategies, in patients with chronic pain. Thus, 134 eligible patients with chronic pain were recruited at the certified *Evaluation and Treatment Pain Center of the A. de Rothschild Foundation* in Paris. We used a sociodemographic questionnaire, the Relationship Scale Questionnaire (RSQ-RC), the Self-Compassion Scale, and the Brief COPE.

Results: Results supported our principal hypothesis; securely attached participants reported a significantly higher global self-compassion score compared with insecurely attached ones. Secure attachment and higher self-compassion levels were positively correlated with functional coping strategies and negatively correlated with dysfunctional ones.

Discussion: Attachment patterns may be the basis of someone's ability to be compassionate to himself and to cope adequately with a difficult situation, such as a chronic pain condition. An attachment-informed approach to pain management could offer a better understanding of the complexity of this clinical condition and potentially provide appropriate support for both patients and health professionals, aiming to improve the effectiveness of interventions.

Keywords: Attachment, Self-compassion, Coping, Chronic pain

1. Introduction

Attachment theory proposes a theoretical model that aims to explain how the development of early interpersonal relationships forms cognitive patterns that qualify an individual's perception as being worthy of care (care-seeking) and the perception of others as being reliable in providing care (caregiving).^{2,3} Attachment style tends to be stable through life and affects how people think, feel, and behave in close relationships all over the life span, "from the cradle to the grave"³ (p. 129). Therefore, attachment security/insecurity is perceived as a diathesis, which determines how individuals relate to each other and manage threatening situations such as an illness.²²

Previous studies have shown that attachment style has an indirect effect on pain management. Patients with chronic pain and insecure attachment report higher levels of pain-related stress, anxiety, depression and catastrophizing,^{4,18–20,28} and lower pain self-efficacy.¹⁹ They are more likely to use emotion-focused than problem-focused coping,²¹ report greater pain intensity and disability,^{17,28,30} describe themselves and their pain with more threatening terms, and feel less capable to cope with pain.^{18,21} Individuals with insecure attachment also report greater usage of health care.⁴ Patients who met the criteria for "chronic widespread pain" were 70% more likely to report insecure attachment than the group of patients with no pain.⁶

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

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Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www.painrpts.com).

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PR9 8 (2023) e1087

<http://dx.doi.org/10.1097/PR9.0000000000001087>

On the other hand, self-compassion is a concept that is gradually taking its place as a resilience factor in patients with chronic pain, associated with greater pain acceptance, lower levels of anxiety and depression,⁵ as well as with adaptive coping strategies (active coping, acceptance, and positive reframing) in patients with chronic pain. The concept of self-compassion refers to an individual's capacity to contain their feelings of suffering with a sense of warmth, connection, and care.²⁴ This involves an ability to be kind to oneself and to confront one's difficulties with understanding and as part of the human experience, as well as to keep one's emotions and thoughts in balanced awareness without overidentifying with them (ie, mindfulness). Early experiences either support or hinder the development of soothing and threat systems and influence the formation of emotional self-regulation and the ability to be compassionate.^{11–13}

Attachment patterns and self-compassion seem likely to influence not only the emotional experience but also the means through which a person will cope with the situation.

Thus, the purpose of our study is mainly to explore the interrelationships between these related variables in patients with chronic pain to improve intervention and help patients to adopt more functional strategies to cope with chronic pain. The study's novelty is rooted in the fact that there is no research articulating these 3 variables together, and very few that studies them separately, in patients with chronic pain.

Attachment quality and self-compassion are more stable variables of an individual's psychological functioning and are not exclusive to the chronic pain context, so similar results from studies conducted in the general population are expected.^{16,25,26,31} Specifically, our principal hypothesis is that secure attachment will be positively correlated with global self-compassion. Regarding the coping variable, we will explore how attachment quality and self-compassion are related to coping quality.

2. Methods

2.1. Participants

In this study, 134 participants were eligible at the chronic pain centre of the hospital "Adolphe de Rothschild Foundation" in Paris, among them 97 women (72.4%) and 37 men (27.6%). The average age was 53.2 years (SD = 14.5). The majority were married (45.9%) or cohabiting (8.27%) with their partner. Forty-seven percent of them had a higher education diploma. **Table 1** describes the sociodemographic characteristics of all eligible participants.

2.2. Measures

This is a quantitative study that was performed using a socio-demographic questionnaire and 3 self-report questionnaires:

The Relationship Scale Questionnaire—Reviewed Coding (RSQ-CR) was developed by Bartholomew and Horowitz,² and its coding of the French version was reviewed by Tereno et al.²⁹ The RSQ-CR is an adult attachment self-administered scale that has as output variables a global security scale and 4 subscales that define 4 different attachment styles. Each of the 30 items is scored on a range of a 5-point Likert scale (RSQ-CR scoring details in supplementary materials, available at <http://links.lww.com/PR9/A199>).

The RSQ-CR has a satisfactory internal consistency in its scales, and Cronbach's α was 0.69 to 0.82. For the factor "detached" ($\alpha = 0.69$), "secure" ($\alpha = 0.73$), "preoccupied" ($\alpha = 0.76$), and

"disorganised" ($\alpha = 0.79$), the internal consistency was globally good, and for the factor "global security index" ($\alpha = 0.82$), the internal consistency was very good.²⁹

The Self-Compassion Scale (SCS)^{15,24} is a self-compassion questionnaire for adults that includes of 26 items, coded in a 5-point Likert scale and grouped into 6 subscales that measure 3 main components: self-compassion vs self-judgment, common humanity vs isolation, and mindfulness vs overidentification (SCR scoring in supplementary materials, available at <http://links.lww.com/PR9/A199>).

The French version of SCS has a satisfactory internal consistency in its scales, and Cronbach's α was 0.74 to 0.88. For the factors "common humanity" ($\alpha = 0.74$), "overidentification" ($\alpha = 0.77$), and "isolation" ($\alpha = 0.79$), the internal consistency was good. For the factors "self-judgment" ($\alpha = 0.85$), "mindfulness" ($\alpha = 0.81$), and "self-care" ($\alpha = 0.89$), the internal consistency was very good. Internal reliability for the total score of the French version of the SCS was excellent ($\alpha = 0.94$).¹⁵

The Brief COPE (state version)²³ is a 28-item self-administered questionnaire of the coping state, which takes into account the specific way in which people cope with a given stressful situation. It is composed of 14 subscales (2 items each) assessing the following distinct coping dimensions: (1) active coping, (2) planning, (3) seeking instrumental social support, (4) seeking emotional social support, (5) expressing feelings, (6) behavioural disengagement, (7) distraction, (8) blaming, (9) positive re-interpretation, (10) humour, (11) denial, (12) acceptance, (13) religion, and (14) substance use. Participants rate each item on a four-point Likert scale: "I have not been doing this at all," "a little bit," "a medium amount," and "I have been doing this a lot," score 1 to 4 for each item, and no reverse scoring.

The French version of Brief COPE state version has good psychometric qualities. The confirmatory factor analysis showed satisfactory results. The χ^2 obtained was equal to 391, $P < 0.05$. The GFI was 0.87, the AGFI was equal to 0.80, and the RMR less than 0.06.²³

Muller and Spitz²³ make a distinction between functional coping strategies and dysfunctional coping strategies: Functional strategies aim to adjust the person to the situation and to preserve a certain quality of life (planning, active coping, positive reframing, and acceptance); some strategies are functionally variable (instrumental support, emotional support, venting, religion, humour, and distraction), and their functional variability depends on the circumstances and the particular use by each. Dysfunctional strategies do not promote a person's adjustment to a given situation, nor their well-being in the face of this situation (self-blame, denial, substance use, and behavioural disengagement).

2.3. Procedures

2.3.1. Recruitment procedures

Each patient with chronic pain (defined as pain persisting longer than 3 months) who made a new request for treatment at the chronic pain centre of the hospital "Adolphe de Rothschild Foundation" in Paris during the study's inclusion period (December 2018–December 2020) was consecutively offered to participate in the research. Inclusion criteria were being an adult (older than 18 years), French-speaking or bilingual, and affiliated or a beneficiary of a Social Security plan. Patients already treated in another pain centre in the past, patients being followed for cancer, breastfeeding women, patients being followed for Parkinson disease, and patients with a previous psychiatric diagnosis. Patients benefiting from a legal protection measure

Table 1
Sociodemographic characteristics.

Variable	N = 134	Overall, n (%)
Sex	Women	97 (72.4)
	Men	37 (27.6)
Age	Mean (SD)	53.2 (14.5)
	Median [min, max]	51.0 [22.0, 89.0]
Level of education	Vocational diploma (BEP, CAP)	20 (15.0)
	Higher education (BAC + 1 to BAC + 5)	63 (47.4)
	High school without high school diploma (BAC)	10 (7.5)
	High school diploma (BAC) or professional diploma (Brevet)	12 (9.0)
	No diploma	15 (11.3)
	Middle school without middle school diploma (BEPC)	5 (3.8)
	BEPC	4 (3.0)
	BEPC	4 (3.0)
	ND	1
Socioprofessional category	Employees	35 (26.3)
	Workers	5 (3.8)
	Students	4 (3.0)
	Executives and higher intellectual professions	28 (21.1)
	Intermediate professions	5 (3.8)
	Unemployed	15 (11.3)
	Stay-at-home parents	3 (2.3)
	Retired	29 (21.8)
	No professional activity	15 (11.3)
	Artisans, traders, and business executives	3 (2.3)
	ND	6 (4.5)
	Missing	1
Marital status	Married/partnered	61 (45.9)
	Divorced	17 (12.8)
	Separated	4(3.0)
	Cohabiting	11 (8.3)
	Widowed	7 (5.3)
	Single	30 (22.6)

were excluded from the research, according to the guidelines of the French Ethics Committee. All patients who agreed to participate have completed informed and written consent.

The study adhered to the tenets of the Declaration of Helsinki. A French Ethics Committee (Comité de Protection des Personnes Est IV) approved this study on October 9, 2018 (IDRCB: 2018-A01167-48). This clinical study was registered at clinicaltrials.gov under the number NCT: NCT03845816.

2.3.2. Administrative procedures

For the comfort of the participants, an appointment with the psychologist–researcher of the chronic pain centre was proposed to them on the same day of one of their 2 first appointments. At the end of this first assessment, an additional, but optional, appointment was proposed for the restitution of the results of the questionnaires and for a possible therapeutic orientation.

2.3.3. Statistical procedures

Data were statistically analysed using R (version 4.0.3). Descriptive statistics are reported as mean and SD for continuous variables and as frequency and percentages for categorical variables. *t* test, or Wilcoxon test, when appropriate, was used to compare continuous variables (self-compassion scores, coping strategies scores, and attachment quality scores) between groups (secure vs insecure attachment; women vs men). Nonparametric test was used if assumptions were not met. χ^2

test, or Fisher exact test when appropriate, was used to compare qualitative parameters (sex and attachment type). Correlations of self-compassion scores, coping strategies scores, and attachment quality scores were realised using Pearson method or Spearman method when appropriate. As an exploratory analysis, multivariate linear regression was conducted to assess the association of attachment type on global self-compassion score adjusted to sex. Because it is an exploratory study, no correction of multiple testing was realized. A mediation analysis was realised to found if total self-compassion mediated between attachment type and coping strategies. A *P*-value <0.05 was considered as statistically significant.

3. Results

3.1. Sample description at inclusion

Regarding their pain status, described in Table S1, available at <http://links.lww.com/PR9/A199>, participants presented most frequently, peripheral neuropathic pain (15%), low back pain (15%), headaches (9.8%), and central neuropathic pain (8.3%).

3.2. Attachment quality

In our sample, the mean of secure score was 4.30 (SD = 0.61), which is higher than the secure threshold point of 3.67. Regarding attachment quality, described in **Table 2**, of all the participants, 45.5% (n = 60) had a secure attachment style, and 54.5% (n = 72) had an insecure attachment style.

Table 2
Attachment quality.

Attachment pattern (N = 134)	Mean (SD)	n (%)	P
Secure	4.30 (0.61)	72 (54.5)	$P < 0.001^*$
Insecure	2.73 (0.63)	60 (45.5)	
Secure women	4.28 (0.55)	44 (73.3)	
Secure men	4.22 (0.66)	16 (26.7)	
Insecure women	2.48 (0.53)	51 (70.8)	n.s.†
Insecure men	2.54 (0.59)	21 (29.2)	

* Fisher exact test.

† χ^2 test.

3.3. Self-compassion

As seen in **Table 3**, subjects in our sample had a mean of self-compassion of 2.92 (SD = 0.64), which corresponds to a moderate level of self-compassion (moderated level from 2.5 to 3.5 to the SCS scale). All other subscale scores were moderate for our population. The overidentification, self-judgement, and isolation subscales indicate less self-compassion, and they are reversed for the total score calculation. Men reported a significantly ($P = 0.02$) higher mean of global self-compassion score (mean = 3.13; SD = 0.61) when compared with women (mean = 2.84; SD = 0.63). Self-kindness scores were also significantly ($P = 0.008$) higher in men (mean = 3.17; SD = 0.97) compared with women (Mean = 2.66; SD = 0.94).

3.4. Coping strategies

Table 4 shows mean values and SDs of the use of coping strategies. Two Wilcoxon tests were performed with 2 different variables: sex and attachment quality (secure or insecure). Women in our sample (mean = 4.49; SD = 1.74) reported significantly lower ($P = 0.05$) acceptance coping compared with men (mean = 5.59; SD = 1.94). Securely attached individuals reported a significantly higher ($P = 0.02$) mean of active coping score (mean = 5.22; SD = 1.44) compared with insecurely attached individuals (mean = 4.60; SD = 1.59).

3.5. Attachment quality and self-compassion

t test showed that securely attached participants (mean = 3.14; SD = 0.61) reported a significantly higher ($P < 0.001$) global self-compassion score compared with the insecurely attached individuals (mean = 2.73; SD = 0.61). The securely attached subjects also reported significantly higher levels ($P = 0.01$) of self-kindness (mean = 3.01; SD = 1.01), compared with the insecurely attached ones (mean = 2.62; SD = 0.90). Scores on the isolation items were also significantly higher ($P = 0.002$) for the securely attached patients (mean = 3.29; SD = 1.13), compared with insecure attachment ones (mean = 2.69, SD = 0.96) (**Fig. 1**, Table S2, available at <http://links.lww.com/PR9/A199>).

At an alpha risk set at 0.05, in multivariate analysis, being a woman decreases the total self-compassion score (-0.30 [-0.53 to -0.07], $P 0.01$) compared with being a man, and having a secure attachment increases the total self-compassion score (0.41 [0.20 – 0.61], $P < 0.001$) compared with having an insecure attachment.

Correlation analysis (**Fig. 2**, Table S3, available at <http://links.lww.com/PR9/A199>) showed that the global security scale was significantly and positively correlated with global self-compassion

($r = 0.41$, $P < 0.05$), self-kindness ($r = 0.26$, $P < 0.05$), self-judgment ($r = 0.29$, $P < 0.05$), isolation ($r = 0.35$, $P < 0.05$), mindfulness ($r = 0.23$, $P < 0.05$), and overidentification ones ($r = 0.38$, $P < 0.05$).

Insecure detached attachment scale was significantly and negatively correlated with self-judgment ($r = -0.27$, $P < 0.05$), with isolation ($r = -0.31$, $P < 0.05$), and with total self-compassion scores ($r = -0.30$, $P < 0.05$). Insecure disorganised attachment score was significantly and negatively correlated with self-judgement ($r = -0.24$, $P < 0.05$) and isolation score ($r = -0.05$, $P < 0.05$).

3.6. Attachment quality and coping strategies

Table 5 presents the correlations between attachment styles and coping strategies implemented by patients with chronic pain. The global security score was correlated significantly and positively with instrumental support ($r = -0.19$, $P < 0.05$) but negatively with behavioural disengagement coping ($r = 0.35$, $P < 0.05$). Preoccupied attachment was significantly and positively correlated with instrumental support coping ($r = 0.19$, $P < 0.05$) and with emotional support coping ($r = -0.2$, $P < 0.05$). Secure attachment score was significantly and positively correlated with the active coping ($r = 0.29$, $P < 0.05$), planning coping ($r = 0.28$, $P < 0.05$), instrumental support coping ($r = 0.30$, $P < 0.05$), and significantly and negatively correlated with behavioural disengagement coping ($r = -0.46$, $P < 0.05$). Preoccupied attachment was significantly and negatively correlated with emotional support coping ($r = -0.29$, $P < 0.05$).

3.7. Self-compassion and coping strategies

Table 6 presents the correlations between coping strategies and self-compassion. Active coping was positively and significantly correlated with overall self-compassion score ($r = 0.48$, $P < 0.05$), as well as self-kindness ($r = 0.29$, $P < 0.05$), common humanity ($r = 0.29$, $P < 0.05$), isolation ($r = 0.39$, $P < 0.05$), mindfulness ($r = 0.45$, $P < 0.05$), and overidentification ($r = 0.39$, $P < 0.05$).

Planning score was positively and significantly correlated with mindfulness ($r = 0.33$, $P < 0.05$). Venting was negatively and significantly correlated with self-judgment ($r = 0.18$, $P < 0.05$). Positive reframing was significantly correlated with overall self-compassion ($r = 0.40$, $P < 0.05$), as well with common humanity ($r = 0.31$, $P < 0.05$), isolation ($r = 0.24$, $P < 0.05$), and mindfulness ($r = 0.52$, $P < 0.05$). Acceptance coping was positively and significantly correlated with overall self-compassion ($r = 0.44$, $P < 0.05$), as well as with self-kindness ($r = 0.24$, $P < 0.05$), common humanity ($r = 0.33$, $P < 0.05$), isolation ($r = 0.36$, $P < 0.05$), mindfulness ($r = 0.35$, $P < 0.05$), and overidentification ($r = 0.31$, $P < 0.05$). Self-blame was negatively and significantly correlated with overall self-compassion ($r = -0.27$, $P < 0.05$), as well with self-kindness ($r = -0.18$, $P < 0.05$), self-judgement ($r = -0.39$, $P < 0.05$), isolation ($r = -0.25$, $P < 0.05$), and overidentification ($r = -0.20$, $P < 0.05$). Humour was positively and significantly correlated with overall self-compassion ($r = 0.27$, $P < 0.05$), self-kindness ($r = 0.20$, $P < 0.05$), isolation ($r = 0.29$, $P < 0.05$), and overidentification ($r = 0.23$, $P < 0.05$). Religion coping was positively and significantly correlated with common humanity ($r = 0.2$, $P < 0.05$), and substance use coping was significantly and negatively correlated with common humanity ($r = -0.21$, $P < 0.05$). Finally, behavioural disengagement was negatively and significantly correlated with overall self-compassion ($r = -0.36$, $P < 0.05$),

Table 3**Self-compassion.**

Self-compassion (N = 134)	Total Mean (SD)	Women (N = 97) Mean (SD)	Men (N = 37) Mean (SD)	P
Global self-compassion score	2.92 (0.64)	2.84 (0.63)	3.13 (0.61)	0.02*
Self-kindness items	2.80 (0.97)	2.66 (0.94)	3.17 (0.97)	0.008*
Self-judgment items†	2.69 (0.90)	2.64 (0.89)	2.82 (0.93)	0.3*
Common humanity items	3.22 (0.93)	3.21 (0.97)	3.24 (0.85)	0.8‡
Isolation items†	2.97 (1.08)	2.88 (1.04)	3.19 (1.15)	0.1‡
Mindfulness items	3.23 (0.87)	3.14 (0.87)	3.47 (0.81)	0.05*
Overidentification items†	2.63 (0.97)	2.54 (0.94)	2.88 (1.00)	0.09‡

* Reverse score.

† Student *t* test.

‡ Wilcoxon test.

self-kindness ($r = -0.22, P < 0.05$), self-judgement ($r = -0.20, P < 0.05$), isolation ($r = -0.22, P < 0.05$), mindfulness ($r = -0.30, P < 0.05$), and overidentification ($r = -0.37, P < 0.05$).

According to our results, active coping, self-blame, and behavioral disengagement were each significantly associated with attachment type, and attachment type was significantly associated with total self-compassion ($P \leq 0.05$). For these variables, a mediation analysis was realized to find out if self-compassion act as mediation. When modeling coping strategies on attachment type and total self-compassion, attachment type was not found significantly associated with these coping strategies (Table 7). Therefore, full mediation was observed for total self-compassion between attachment type and the 3 coping strategies. The average causal mediation effects were found statistically significant at an alpha risk set at 0.05.

4. Discussion

The main purpose of our study was to explore the interrelationships between attachment patterns, self-compassion, and coping strategies in patients with chronic pain, to improve therapeutic interventions and help patients adopt more functional strategies to cope with chronic pain.

In our study, most of eligible participants (54.5% of the 134) reported an insecure attachment.

The results of our study support our principal hypothesis: Securely attached individuals have significantly higher global self-compassion scores than insecurely attached individuals.

Our findings are partially consistent with previous findings in both clinical and general population samples. In a clinical population of breast cancer survivors, a recent study revealed significant indirect effects of attachment anxiety and attachment avoidance (on both stress and perceived negative impact of cancer) through lower self-compassion.¹ In a study of university students and adults in the community, Wei et al.³¹ found that self-compassion mediated the relationship between attachment-related avoidance, emotional distress, and anxiety. In a general adult population sample, attachment security predicted higher levels of self-compassion and self-compassion partially mediated the relationships between perceived maternal support, family functioning, and attachment security as predictors of well-being.²⁵ Pepping et al.²⁶ experimentally confirmed that enhancing state attachment security leads to an increase of state self-compassion. More recently, Mackintosh et al.¹⁶ found that low levels of self-compassion and high levels of interpersonal problems were predicted by attachment-related avoidance in

Table 4**Coping strategies.**

Coping strategies (N = 134)	Mean (SD)	Women (N = 97) Mean (SD)	Men (N = 37) Mean (SD)	Wilcoxon test P	Secure (N = 60) Mean (SD)	Insecure (N = 72) Mean (SD)	Wilcoxon test P
Active coping	4.88 (1.55)	4.78 (1.48)	5.14 (1.70)	0.2	5.22 (1.44)	4.60 (1.59)	0.02*
Planning	4.73 (1.65)	4.72 (1.60)	4.75 (1.78)	>0.9	4.73 (1.79)	4.72 (1.52)	>0.9
Use of instrumental support	4.78 (1.71)	4.76 (1.71)	4.84 (1.72)	0.7	5.05 (1.77)	4.56 (1.63)	0.1
Use of emotional support	4.28 (1.78)	4.33 (1.78)	4.16 (1.79)	0.5	4.42 (1.84)	4.17 (1.73)	0.6
Venting	4.45 (1.78)	4.57 (1.72)	4.16 (1.92)	0.1	4.67 (1.87)	4.28 (1.69)	0.2
Positive reframing	4.32 (1.60)	4.16 (1.46)	4.75 (1.89)	0.1	4.53 (1.73)	4.14 (1.48)	0.2
Acceptance	4.80 (1.86)	4.49 (1.74)	5.59 (1.94)	0.002*	4.93 (1.98)	4.69 (1.75)	0.5
Denial	3.20 (1.50)	3.19 (1.53)	3.22 (1.42)	0.9	3.32 (1.51)	3.10 (1.48)	0.4
Self-blame	4.15 (1.74)	4.16 (1.72)	4.11 (1.82)	0.9	3.80 (1.56)	4.44 (1.84)	0.05*
Humor	3.32 (1.56)	3.19 (1.41)	3.67 (1.87)	0.3	3.50 (1.73)	3.17 (1.38)	0.4
Religion	3.78 (2.17)	3.62 (2.03)	4.19 (2.47)	0.3	3.45 (2.09)	4.06 (2.21)	0.09
Self-distraction	4.87 (1.54)	4.84 (1.48)	4.95 (1.70)	0.8	5.00 (1.53)	4.76 (1.55)	0.3
Substance use	2.68 (1.44)	2.65 (1.44)	2.76 (1.44)	0.5	2.53 (1.19)	2.81 (1.62)	0.6
Behavioural disengagement	3.31 (1.42)	3.29 (1.38)	1.38 (1.53)	>0.9	3.05 (1.37)	3.53 (1.43)	0.03*

* $P < 0.05$.

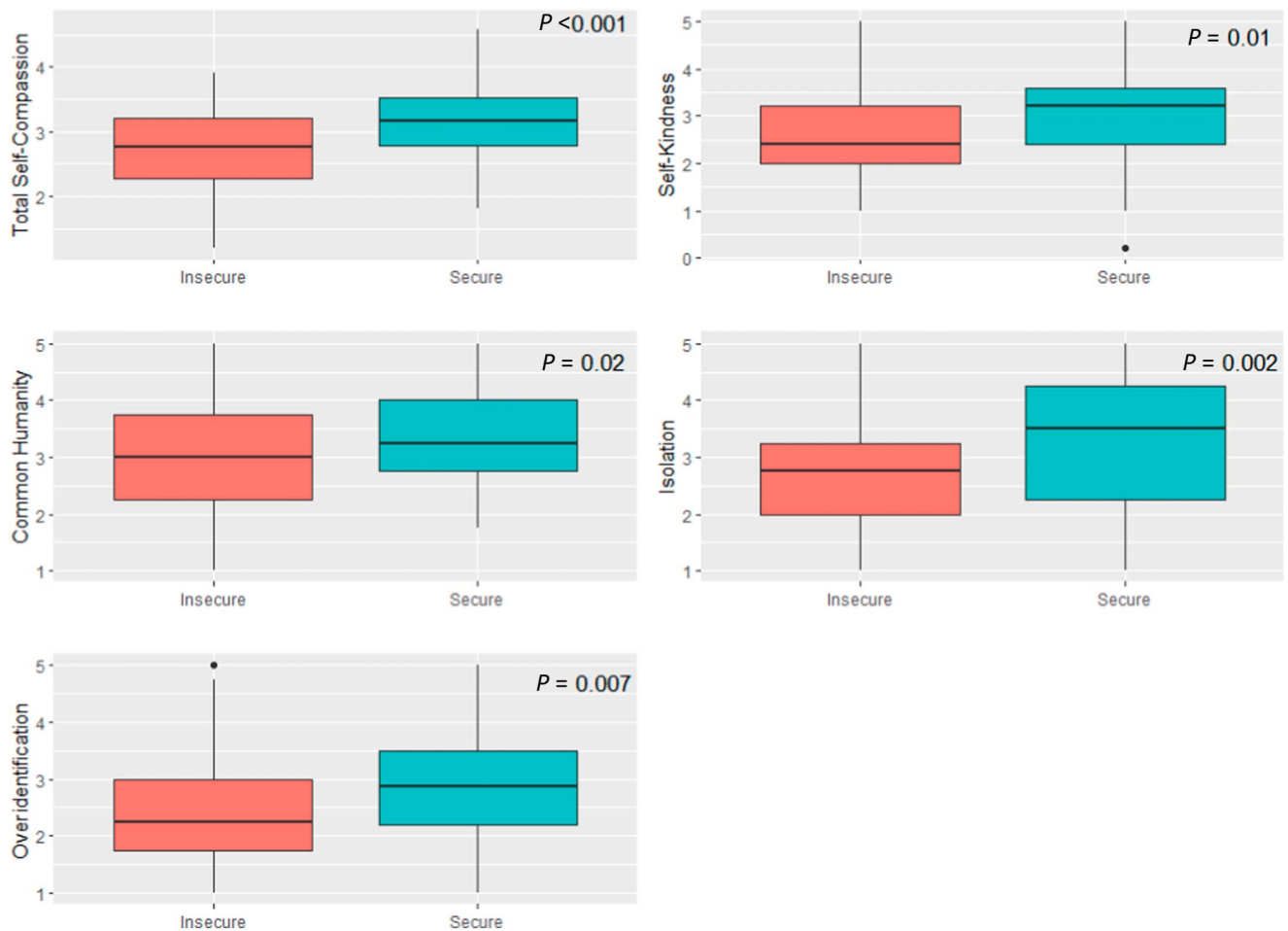


Figure 1. Attachment and self-compassion—comparisons between secure and insecure groups on attachment and self-compassion variables using the Student test or Wilcoxon test.

patients with clinical levels of depression and anxiety, and that self-compassion mediated the relationship between attachment avoidance, emotional distress, and anxiety.

For coping, our results showed that secure attachment is positively correlated with functional strategies, such as active coping and planning, and with strategies with functional variability, as the use of instrumental and emotional support. Secure attachment was significantly and negatively correlated with behavioural disengagement, which is considered as a dysfunctional strategy.

The only empirical evidence linking attachment theory to pain coping was reported by Mikulincer and Florian²¹ who cited unpublished data that patients with insecure attachment use more emotion-focused (acceptance, emotional social support, humour, positive reframing, and religion) and less problem-focused coping strategies (active coping, instrumental support, and planning) to deal with their pain, compared with patients with a secure attachment style.

Self-compassion was also significantly and positively correlated with functional strategies (active coping, positive reframing, and acceptance) and negatively correlated with dysfunctional strategies (self-blame and behavioural disengagement) in our research. There are very few previous studies that link the concepts of self-compassion and coping. In a study by Sirois et al.²⁷ with a sample of women with chronic pain, the authors attempted to create a model that describes which coping

strategies are correlated with self-compassion and coping self-efficacy, as explanatory variables of stress. In support of our finding, the strategies positively correlated with both variables were active coping, acceptance, and positive reframing strategies (adaptive strategies).²⁷ By contrast, strategies negatively correlated with both variables were behavioural disengagement and self-blame (nonadaptive strategies).²⁷ In a more recent study in clinical population,⁸ self-compassion accounted for more variance in use of flexible pain coping strategies (ie, acceptance, mindfulness, values, and cognitive diffusion) and less variance in use of traditional pain coping strategies (ie, pacing, relaxation, and positive self-statements).

Our results clearly highlight the relationship between attachment style, self-compassion, and coping strategies in patients with chronic pain. There are positive correlations between secure attachment, higher levels of self-compassion, and functional coping and negative correlations between insecure attachment, lack of self-compassion, and dysfunctional coping. Full mediation was observed for total self-compassion between attachment type and the 3 coping strategies (active coping, self-blame, and behavioral disengagement). It seems that secure attachment and self-compassion can be considered as protective factors in chronic pain. The results also show that these 2 variables are rather dependent, explaining partly the same part of the variance in the use of coping strategies.

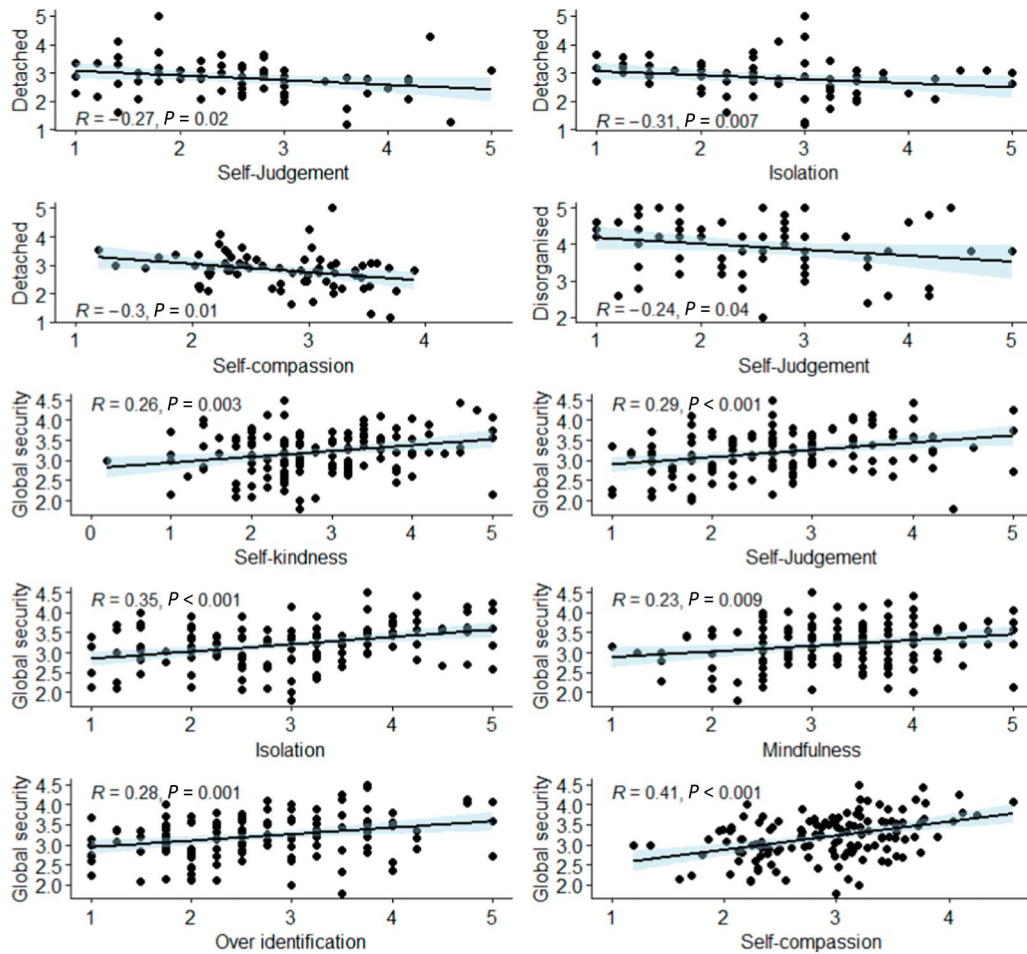


Figure 2. Correlations between attachment quality and self-compassion.

4.1. Clinical implications

In view of these results, the management of patients with chronic pain using programs targeted at the development of self-compassion could be beneficial. There are 2 programs that

focus primarily on the development of self-compassion: The first program is mindful self-compassion (MSC) training,¹⁰ and the second is compassionate mind training (CMT).¹² These 2 programs are based on different theoretical assumptions: MSC

Table 5
Spearman rank correlation between attachment quality and coping strategies.

	Secure	Detached	Disorganized	Preoccupied	Global security
Active coping	0.29*	0.03	0.03	0.03	-0.16
Planning	0.28*	0.00	0.03	-0.01	0.01
Use of instrumental support	0.34*	0.13	-0.11	-0.18	0.19*
Use of emotional support	0.30*	0.11	-0.16	-0.29*	0.13
Venting	0.23	0.08	-0.11	0.01	0.12
Positive reframing	0.21	-0.06	-0.08	-0.17	0.17
Acceptance	0.09	-0.01	0.14	-0.13	0.08
Denial	0.03	-0.05	0.10	0.09	-0.02
Self-blame	0.01	0.05	-0.01	-0.01	-0.17
Humour	0.03	-0.09	0.12	-0.01	0.07
Religion	0.00	0.07	0.10	0.14	-0.17
Self-distraction	0.19	0.08	0.00	-0.12	0.13
Substance use	0.03	0.00	0.26*	0.15	-0.12
Behavioural disengagement	-0.46*	0.09	0.12	-0.08	-0.2*

* P < 0.05.

Table 6
Spearman rank correlation between self-compassion and coping strategies.

	Self-kindness	Self-judgment*	Common humanity	Isolation	Mindfulness*	Overidentification*	Self-compassion
Active coping	0.29†	0.04	0.29†	0.39†	0.45†	0.39†	0.48†
Planning	0.07	-0.14	0.15	0.12	0.33†	0.11	0.15
Use of instrumental support	0.06	-0.06	0.1	0.11	0.12	0.11	0.11
Use of emotional support	-0.01	-0.17	0.01	-0.08	0.06	-0.16	-0.09
Venting	0.06	-0.18†	0.00	0.02	0.05	-0.07	-0.03
Positive reframing	0.35	0.00	0.31†	0.24†	0.52†	0.16	0.40†
Acceptance	0.24†	0.15	0.33†	0.36†	0.35†	0.31†	0.44†
Denial	0.09	-0.09	0.12	-0.12	0.17	-0.08	-0.04
Self-blame	-0.18†	-0.39†	0.08	-0.25†	0.03	-0.20†	-0.27†
Humour	0.20†	-0.02	0.11	0.29†	0.16	0.23†	0.27†
Religion	0.17	-0.06	0.2†	0.00	0.10	-0.03	0.11
Self-distraction	0.13	-0.11	0.1	0.15	0.14	0.16	0.15
Substance use	-0.06	-0.04	-0.21†	-0.03	-0.16	-0.06	-0.12
Behavioural disengagement	-0.22†	-0.20†	-0.14	-0.22†	-0.30†	-0.37†	-0.36†

* Reverse score.

† $P < 0.05$.

is based on the third wave of cognitive behavioural therapy and mindfulness, whereas CMT was developed based on notions of developmental psychology. Yet, they share many exercises and meditation practices, to allow patients to grow with more self-compassion.

Our findings underline that the attachment pattern may be at the basis of someone's ability to be compassionate and to copy adequately with a difficult situation. Although interventions based on the development of self-compassion can be very useful to develop better coping, an attachment-based therapy could be even more beneficial in the long term for patients with chronic pain. In schema therapy (ST), eg, an integrative and attachment-based model of psychotherapy developed by Jeffrey Young,³² the "limited reparenting" is proposing a corrective emotional experience as partial antidote to needs that were not adequately met in childhood. Early maladaptive schemas,³² such as internal working models,³ are primarily founded on early interactions with the primary caregiver. Although ST is based on specific (cognitive, behavioural, interpersonal, experiential, etc) techniques, as well as all the other integrative and attachment-based therapies, it is focusing on validating feelings, understanding schema origins,

but also willing to provide a correcting experience. The therapeutic relationship is becoming a safe transitional space, and of course, the aim is helping the patient to become emotionally autonomous.

From this point of view, we can reverse the hypothesis and propose that if actually pain complaining is as an attachment behaviour, a "cry for security," as Kolb had hypothesised,¹⁴ the patient who conscientiously will be able to recognise and "repair" their schema through therapy will be no longer in need of this specific attachment behaviour. It does not mean that it will necessarily change the pain treatment, but it may change the perception of oneself as worthy of care and the providers of care as more reliable.

Securely attached individuals report less health care usage.⁴ In clinical practice with patients with chronic pain, as therapy progresses, it is obvious that the more a patient is conscious about their insecure patterns of attachment, the less he will use pain complaints to express his psychological distress, and the more easily he will describe a physical complaint about pain without catastrophizing on an emotional level. Dissociating early insecure attachment experiences from the pain-related needs and their response from personal relationships or from health care professionals is maybe a good key for better pain management and treatment.

In a recent review of literature, 17 articles were included examining the association between attachment and different pain conditions from childhood to adolescence.⁹ The findings showed "at-risk" attachment pattern and information processing, higher rates of attachment insecurity and unresolved trauma, or loss in clinical groups (children experienced acute, recurrent, or chronic pain) compared with normative samples. It seems that, among other relevant factors, attachment insecurity plays a predominant role in the maintenance of the chronic pain condition, intensifying the pain experience or obstructing effective recovery.⁷

The awareness that insecure attachment patterns may be a predisposition to the development and the maintenance of a chronic pain condition also concerns all health professionals. As the attachment system is triggered by a painful stimulus, considered as a threatening situation, the approach of health professionals can be crucial for a patient with insecure

Table 7
Association between coping strategies and attachment type (secure vs insecure) adjusted to self-compassion.

N = 131	Active coping		
	Estimates	CI 95%	P
Secure	0.14	-0.35 to 0.63	0.6
Total self-compassion	1.06	0.68 to 1.45	<0.001
N = 130	Self-blame		
	Estimates	CI 95%	P
Secure	-0.46	-1.08 to 0.16	0.1
Total self-compassion	-0.51	-1.00 to -0.03	0.04
N = 131	Behavioral disengagement		
	Estimates	CI 95%	P
Secure	-0.21	-0.70 to 0.28	0.4
Total self-compassion	-0.71	-1.10 to -0.33	<0.001

attachment or unresolved trauma. An attachment-informed approach could offer a better understanding of the complexity of the pain clinical practice, as well as appropriate support beneficial both to patients and health professionals, which could also increase the effectiveness of interventions.

4.2. Study strengths, limits, and future directions of research

The main strength is the study's novelty and the fact that the inclusion of all participants was made in a given point at the very beginning of their treatment, which limits selection bias.

The main limitation of the study is that we assessed attachment, self-compassion, and coping using brief self-report measures. All 3 assessments reflect individuals' subjective perceptions, which may be vulnerable to reporting bias. Qualitative methods or grids of heteroassessment, combined with self-report questionnaires, could provide more solid results in future research.

In addition, there was a very wide range of different diagnoses, including patients with a diagnosis not yet defined. Further research could group together the most frequently encountered diagnoses, making it possible to explore whether the results need to be qualified according to the disease, the degree of disability, the region of the body where the pain is most important, etc.

With respect to the exclusion criteria, there was no age limit to maximise the recruitment of new patients. Although attachment patterns are considered to be stable through time, research in a wider sample could allow us to group patients according to their age, to further study self-compassion and coping scores.

5. Conclusion

In conclusion, this study supports that insecurely attached individuals have significantly lower levels of self-compassion and use less adaptive coping strategies than securely attached individuals. Pain therapeutic approaches should thus increase their focus on attachment as a possible way of improving efficacy of management. Further research is, however, required to explore how attachment patterns and self-compassion are linked to unresolved trauma, other domains of psychopathology, pain intensity, and early maladaptive schemas in patients with chronic pain, with longitudinal designs.

Disclosures

The authors have no conflict of interest to declare.

Acknowledgements

The authors thank the staff and the patients at the diagnostic and treatment centre of chronic pain of the hospital A. de Rothschild Foundation in Paris and specifically Dr Anne-Margot Duclot, Dr. Jean Bruxelles, Dr. Jean-Baptiste Thiebaut, and Ms Meriem Hachem Elaib for their valuable help. This study was promoted and financed by the hospital A. de Rothschild Foundation, and the hospital was given the MERRI (SIGREC-type) endowment to set it up.

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available because of application of the European Data Protection Regulation.

Appendix A. Supplemental digital content

Supplemental digital content associated with this article can be found online at <http://links.lww.com/PR9/A199>.

Article history:

Received 14 October 2022

Received in revised form 12 April 2023

Accepted 11 May 2023

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