The relationship of parental bonding to depression in patients with chronic pain

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Abstract: Attachment theory is a theory of normal development as well as a theory of psychopathology. Attachment theory and research suggests that different types of parental bonding may be important determinants of illness behaviour, depression, pain perception and treatment response in individuals with chronic pain. Different types of parental bonding have been shown to be associated to specific personality characteristics and a variety of psychiatric disorders. We assessed sixty-five (65) patients with chronic pain who visited the pain management unit of Larissa University Hospital in Greece. All patients completed the Parental Bonding Instrument (PBI), the Beck Depression Inventory (BDI) and the Visual Analogue Scale (VAS) for pain. Results demonstrated that patients who reported an affectionless bonding (overprotective and insensitive) with their parents and especially their mother, reported significantly greater depression and higher VAS scores. Conversely, chronic pain patients with an optimal parental bonding reported lower depression and VAS scores. These findings suggest that parental bonding style may be a useful construct for examining factors affecting psychiatric disorders and pain perception in patients with chronic pain.

Keywords: Chronic pain, depression, parental bonding

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INTRODUCTION
John Bowlby (1907-1990) (1) proposed the attachment theory as a theory of social and emotional development with life-long applicability. Indeed, someone can claim that it is the most widely accepted and validated approach in developmental psychology. Adult attachment theory has been proposed as a developmental framework for chronic pain (2). Bowlby (3) proposed that the attachment system is formed during infancy and early childhood based upon the nature of the child’s interaction with primary caregivers. Based on the caregiver responses the child develops specific internal models regarding themselves and others. These models or attachment styles tend to remain stable and affect cognitions, emotions and
behaviours in all domains of life. Attachment anxiety is associated with exaggerated appraisals of threat, emotional distress, poorer coping and excessive dependence on others (4). A problematic attachment is also associated with higher levels of anxiety and depression and with personality characteristics such as low self-esteem and endogenous stress (5).

Chronic pain is becoming an increasingly important medical issue in industrialised countries. The prevalence of chronic pain appears to be increasing. In 1993, the prevalence of chronic pain was 15% to 20%. This increased to 22% in 1998 and 46.5% in 1999 (6). Chronic pain often causes, or is caused by, mental dysfunction and emotional problems. Anxiety and depression is often an individual’s first response to pain, and this emotional response can itself worsen the pain (7).

Researchers try to create a model of chronic pain taking into account the complex associations between pain characteristics and the diversity of biopsychosocial variables. Recently, the Psychobiological Model of Chronic Pain has detailed a range of: predisposing factors, eliciting stimuli and responses and maintaining processes that contribute to psychophysiological and pain responses (8).

Mental illness has been strongly associated with chronic pain in numerous studies (9, 10). More specifically, high anxiety levels have been associated with more intense pain and depressive symptoms have been associated with headache and chest pain (11).

A number of studies have examined associations between attachment and chronic pain (4). In particular, the negative cognitive dispositions and emotional distress associated with insecure attachment have been proposed to contribute to the etiology of chronic pain (12). As Meredith et al (13) suggested a critical assumption of this proposition that insecure attachment precedes chronic pain and thus represents a vulnerability factor for the development of chronic pain. Insecure attachment has been related to distress and suffering (14), depression, a number of pain-related health care visits (15) and threat appraisal of pain (13). Moreover, a few studies have found significant associations between attachment and measures of pain intensity. Among chronic patients being treated at a pain clinic, those who scored high on attachment avoidance and low on self efficacy had particularly high levels of pain intensity (13). Ciechanowski and colleagues (15) found that a fearful attachment style was associated with significantly higher levels of depression and pain catastrophising.

In the present study we explored the relationship of parental bonding to depression in chronic pain patients. It was predicted that chronic pain patients with higher depression scores will also score high on the VAS for pain. In particular it was hypothesised that patients with insecure attachment will report higher depression scores and higher pain scores. On the other hand we predicted that patients with secure attachment will report lower depression scores and will cope better with the pain.

METHODS
Population
We assessed 65 chronic pain patients who visited the pain management unit of Larissa University Hospital in Greece. Of these 40 were females 25 male, both of an average socioeconomic status. The participants were aged between 21-72 years (mean 46 years). The majority were married and about 70% were employed full-time.
Procedure
All participants provided informed consent and completed the following questionnaires: a Visual Analogue Scale (VAS) for pain, the Parental Bonding Instrument (PBI), and the Beck Depression Inventory (BDI).

Measures
Visual Analogue Scale (VAS). The VAS was designed by Huskisson (16) as a self-report measure of strength for pain. The response format is a 10-cm straight line ranging from ‘no pain’ to ‘worst possible pain’.

Parental Bonding Instrument (PBI). The PBI (17) consists of 25 statements. Care is measured by 12 items on a dimension with one pole defined by empathy, closeness, emotional warmth, affection and on the other by neglect, indifference and emotional coldness. Overprotection is evaluated by 13 items, ranging from overprotection, intrusion, excessive contact, control and prevention of independent behaviour to autonomy and allowance of independence. The Greek version of the PBI was backtranslated into English and possesses a satisfactory test-retest reliability and internal consistency (6).

Beck Depression Inventory (BDI). BDI was created by Beck, Rush, Shaw & Emergy (18). It is a widely was 21-item inventory of the affective, cognitive, motivational and somatic symptoms of depression. It consists of four scales (absent, mild, moderate and clinical depression). Research indicates that it is reliable and correlates well with other self-report measures (19).

RESULTS
All data was analysed using SPSS 13.0. The mean scores of the PBI are shown in table 1. Mothers are perceived as more caring and more controlling than fathers as indicated by the high scores in both the care and the protection scale of the parental bonding instrument.

There were no significant correlations between paternal bonding and depressive symptoms. On the other hand, according to the results of maternal bonding, as shown in table 2, it appears that a person is in greater risk of developing depression in adulthood when the mother shows lack of care or when she appears overprotective, since there is an important correlation between maternal bonding and depressive symptoms. Moreover, a person reports experiencing or perceiving greater pain in adulthood when the mother shows lack of care or when she appears overprotective in childhood.

A series of regression equations was computed to establish whether depression plays a mediating role between parental bonding and perception of pain. Firstly, regression equations were calculated for depression as a dependent variable and maternal bonding as an independent variable. As results shown in table 3 there is a clear relationship between low maternal care and overprotection in childhood with the existence of depressive symptoms in adulthood, meaning that a person reports more depressive symptoms when he/she has an insecure attachment with the mother.

A second series of equations was computed to establish whether maternal bonding has an effect on the perception of pain intensity. As results show in table 4 there is a clear relationship between low maternal care and overprotection in childhood with increased VAS pain scores, meaning that a person reports experiencing greater pain when he/she has an insecure attachment with the mother.
DISCUSSION

This study was conducted in order to explore the associations between attachment dimensions and depression in the context of chronic pain. Overall the findings of the present study suggest that there is a clear connection between parental bonding types and the perception of chronic pain, with depressive symptoms playing a mediating role.

We first observed that correlations between maternal bonding and depression do exist. This suggests that when the mother is overprotective and shows lack of care and sensitivity the child is at greater risk for developing depression in adulthood. On the other hand there was no significant correlation between paternal bonding and depressive symptoms. This is in accordance with previous research findings (6). Moreover we observed a strong correlation between depressive symptoms and pain intensity. In particular when patients reported greater pain depressive symptoms also increased. A number of studies report a clear relationship between depression and chronic pain some suggesting that depressive patients are at greater risk for developing a chronic pain condition (20) while others report that living with pain results to depression (21). More research is needed in order to understand the etiology of pain associated depression.

In accordance with previous research studies (22) our results show that maternal bonding has an effect on the perception of pain intensity. Regression of VAS scores over maternal bonding reveals that there is a clear relationship between low maternal care and overprotection in childhood with increased pain scores. Meaning that, a child who grows up with an overprotective mother who shows lack of sensitivity, has a greater chance of experiencing intense chronic pain in adulthood.

Although our findings were consistent with our expectations and with earlier research we must note that they should be treated with caution. Firstly, the sample used was 65 chronic pain patients who agreed to participate in the study of 220 people approached. Patients who were in pain while visiting the pain clinic found it difficult to complete questionnaires. Secondly, we did not take into account the pathophysiology of their pain, something that can differentiate to an extent the pain experience. Thirdly, we did not consider the quality of life of the patients, a dimension with great impact on depression. Lastly, all measures were reliant on self-report.

Our findings are supported by Bowlby’s theory. The fact that insecure attachment can be an obstacle to successful treatment in some clinical settings highlights the value of employing perspective to improve clinical management for those living with chronic pain. As Meredith, Ownsworth and Strong (23) suggest adult attachment theory warrants further consideration in relation to treatment, early intervention, and prevention of chronic pain conditions. Moreover, longitudinal studies of normative populations and high risk populations are needed to provide a fuller picture of the role of attachment in the perception and management of chronic pain.

Tables

<table>
<thead>
<tr>
<th></th>
<th>Care</th>
<th>Overprotection</th>
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<tr>
<td>Maternal Bonding</td>
<td>27.22 (5.3)</td>
<td>15.85 (6.7)</td>
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<tr>
<td>Paternal Bonding</td>
<td>24.8 (6.48)</td>
<td>14.57 (6.8)</td>
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</table>
Table 2. Correlation coefficients (Pearson r) between PBI, BDI and VAS scores

<table>
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<th>Depressive Symptoms</th>
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<tbody>
<tr>
<td>Maternal Care</td>
<td>-.32**</td>
</tr>
<tr>
<td>Maternal Protection</td>
<td>.22**</td>
</tr>
<tr>
<td>VAS</td>
<td>.20**</td>
</tr>
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** p<0.01, * p<0.05

Table 3. Regression of depressive symptoms (BDI) over maternal bonding

<table>
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<tr>
<th>Depressive symptoms</th>
<th>R</th>
<th>R square</th>
<th>Beta</th>
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<th>p</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Maternal Protection</td>
<td>.243</td>
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<td>.243</td>
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Table 4. Regression of VAS scores over maternal bonding

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<th>Beta</th>
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<td>Maternal Protection</td>
<td>.278</td>
<td>.01</td>
<td>.240</td>
<td>2.253</td>
<td>.001</td>
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REFERENCES


