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Attachment and Pain: Recent Findings and Future Directions

Laura S. Porter¹, Deborah Davis², and Francis J. Keefe¹

¹ *Duke University Medical Center*

² *University of Nevada-Reno*

Long standing interest in individual differences linked to the experience of, and adjustment to, pain has recently expanded to include the “attachment styles” (Bowlby, 1982) of both pain patients and their caregivers. Following a brief review of the nature and origin of attachment styles, we review recent research addressing issues regarding attachment and pain and offer suggested directions for future research.

The Concept of Attachment

Bowlby (1982) proposed that the attachment system is formed during infancy and early childhood based upon the nature of the child’s interactions with primary caregivers, particularly interactions surrounding affect regulation and management of distress. Theoretically, attachment behaviors (such as seeking closeness and comfort from a caregiver) are triggered by threats of three kinds: threats to the subjective availability of the caregiver, internal distress (e.g., from hunger, illness, or pain), or external threats to safety or wellbeing. Based on the pattern of caregiver responses during these early interactions, the child develops specific internal mental models or schemas regarding themselves and others that form the basis of enduring strategies for need satisfaction and affect regulation. These mental models (or “attachment styles”) tend to remain stable “from cradle to grave” (Bowlby, 1982), and affect cognitions, emotions and behaviors in virtually all domains of life (see Mikulincer & Shaver, 2003 for a review of the development and impact of attachment styles).

Attachment researchers have identified four attachment styles that vary along two dimensions: attachment anxiety (worry over the availability, responsiveness, and positive regard of others) and attachment avoidance (discomfort with closeness and interdependence). Those with a “secure” attachment style are low on both dimensions, whereas “preoccupied” persons are high in anxiety but low in avoidance, “dismissing” persons are high in avoidance and low in anxiety, and “fearful” persons are high in both.

Of particular importance to the issue of the experience and management of pain, attachment style has been linked to appraisal of and reactions to threats of all kinds (Mikulincer & Shaver, 2003, in press). Secure persons tend to engage in the most realistic appraisal of threats, possess greater optimism and self-efficacy regarding threat-related management and outcomes, and experience the most positive outcomes. Both dimensions of attachment insecurity, however, are associated with less optimal emotions and behaviors.

Corresponding author: Francis J. Keefe, Pain Prevention and Treatment Research Program, Box 3159, Duke University Medical Center, Durham, NC 27710 Email: Keefe003@mc.duke.edu.

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Attachment anxiety is associated with “hypervigilance” with respect to threats, exaggerated appraisals of threat, enhanced and prolonged emotional distress and threat-related rumination, poorer coping, excessive dependence on others, and poorer outcomes. Attachment anxiety is also associated with higher resting levels of anxiety and depression, and with personality traits such as neuroticism that are themselves associated with distress.

Attachment avoidance, in contrast, is associated with “deactivating” strategies that tend to downplay threat. This includes minimizing attention to threat-related cues, avoiding threat-related cues, under-appraisal of threat, avoidant and emotion-focused coping strategies (as opposed to direct problem solving), “compulsive self-reliance” and underutilization of social support, and poorer outcomes (Mikulincer & Shaver, 2003, in press).

Finally, both forms of insecurity are associated with non-optimal caregiving behaviors and emotional responses to giving and receiving care. Hence, there is substantial reason to expect the attachment styles of both pain patients and their caregivers to affect the pain-related experiences of each. Below we review recent studies in this area, and then turn to suggestions for future work.

Literature Review

A number of recent studies have examined how attachment relates to adjustment in persons having persistent pain. Several studies have found significant associations between attachment and measures of pain intensity. In a community sample of individuals with arthritis or related conditions, those with an anxious attachment style reported significantly higher levels of pain (McWilliams et al., 2000). Similarly, in a sample that included both pain patients and community volunteers, anxious attachment was associated with higher levels of pain intensity and pain-related suffering (MacDonald & Kingsbury, 2006). Among chronic pain patients being treated at a multidisciplinary pain clinic, those who scored high on attachment avoidance and low on pain self-efficacy had particularly high levels of pain intensity (Meredith et al, 2006a). However, other studies have failed to find significant associations between attachment and pain intensity: Williamson et al (2002) measured attachment in children having persistent disease-related pain and their caregivers. In this study, neither child nor caregiver attachment style was related to pain. Similarly, a recent unpublished study conducted by our research team (Rumble et al., 2006) examined attachment styles in lung cancer patients and their spouses and found no significant associations between patient or spouse attachment and pain intensity.

Several studies have also examined associations between attachment and measures of psychological adjustment and coping. Meredith and colleagues (2006a) found that patients who had fearful and preoccupied attachment styles reported significantly lower levels of pain self-efficacy and higher levels of anxiety, while patients with more secure attachment had higher levels of pain self-efficacy. A second study conducted by this research team found that attachment anxiety and avoidance were positively related to depression, and that attachment avoidance was a significant predictor of post-treatment depression even after controlling for age, gender, pain intensity, and pre-treatment depression (Meredith et al, 2007). Ciechanowski and colleagues (2003) found that a fearful attachment style was associated with significantly higher levels of depression and pain catastrophizing, while secure attachment was associated with lower levels of depression. Interestingly, this study also found that anxious patients had a significantly higher level of pain-related health care visits. In our study of lung cancer patients (Rumble et al., 2006), we found that patient anxious and avoidant attachment were related to higher depression and lower levels of social functioning; anxious attachment was also associated with higher levels of anxiety.

There is also evidence that *caregivers'* attachment styles may influence their own adjustment as well as that of the patient. Williamson and colleagues (2002) found that caregivers high in attachment anxiety had higher levels of depression which in turn was associated with greater child depression. In addition, caregivers high in avoidance used more avoidant coping, which in turn was associated with more child and caregiver depression. Among spouses of lung cancer patients, anxious attachment was associated with higher levels of caregiver strain, while avoidant attachment was associated with higher levels of caregiver strain and anger, and lower levels of marital quality and self-efficacy for helping the patient manage symptoms (Rumble et al., 2006).

Conclusions and Future Directions

Taken together, the results of these studies suggest that attachment style is related in meaningful ways to indices of adjustment to persistent pain. In particular, insecure patients appear to experience higher levels of pain and psychological distress than secure patients, although these effects tend to be somewhat more pervasive and consistent for attachment anxiety than attachment avoidance. Although these findings are potentially important, more research is needed to replicate and extend them. We outline several potentially promising avenues for future research below.

First, a number of basic questions remain regarding associations between attachment and adjustment to pain. For example, evidence for a direct association between attachment and pain intensity is mixed, thus future studies should consider whether processes such as pain appraisals or pain coping mediate these relationships. In addition, the research would benefit from increasing the scope of variables examined. Thus far the majority of research has focused on psychological adjustment, with little attention to other important components of the management of persistent pain such as health care utilization and self-management. Ciechanowski and colleagues have conducted a number of studies with various patient populations that suggest the relevance of attachment to these areas. For instance, they found that anxious attachment was associated with higher levels of pain-related health care visits among pain patients (Ciechanowski et al., 2003) and increased rates of primary care utilization and medical costs among primary care recipients (Ciechanowski et al., 2002). They have also found that, among patients with diabetes, a dismissing attachment style was associated with poorer self-management (e.g. exercise, diet, adherence to medication), and that these associations were partially mediated by the quality of the patient-provider relationship (Ciechanowski et al., 2004). Taken together, these findings suggest that the impact of attachment on health care utilization and self-management among patients with persistent pain are potentially fruitful areas for further research that could have important clinical implications.

Second, additional studies are needed to further explore the importance of the attachment style of both patients and their significant others. While some have suggested the importance of caregiver attachment (Davis & Follette, 2003; Mikail, 2003), there has been little empirical research examining the impact of caregiver attachment on their own adjustment or that of a patient having pain. In addition to examining independent effects of patient and caregiver attachment, future research should consider the match between patient and caregiver attachment styles (Davis & Follette, 2003). Adjustment to pain may be problematic, for example, when an anxious (and therefore needy and dependent) patient is cared for by an avoidant spouse who is uncomfortable with displays of distress or dependence. Studies involving direct observation of patients and their caregivers interacting would be particularly valuable in this regard. A related question for future research is whether the attachment styles of health care professionals interact with that of their patients. Recently, a number of researchers have pointed to the importance of provider sensitivity to attachment-related needs

and motives, and tailoring caregiver interactions to patient attachment styles (e.g. Tan et al., 2005; Thompson & Ciechanowski, 2003).

Third, all of the studies reviewed were conducted in samples of people reporting persistent pain. One intriguing possibility is that, in pain-free individuals, insecure attachment may increase one's propensity to respond adversely to pain in a way that may increase the likelihood that a persistent pain condition will develop. Several recent studies provide preliminary support for this hypothesis. First, among pain-free individuals exposed to an acute (cold pressor) pain experience, those with attachment anxiety had lower pain thresholds and reported less perceived control over pain, and more stress, depression, and pain catastrophizing during the pain task (Meredith et al., 2006b). In a second study, pain-free individuals high in attachment anxiety reported much higher levels of pain-related fear, hypervigilance to pain, and catastrophizing (McWilliams & Asmundson, 2007). These studies provide preliminary evidence suggesting that anxious attachment may be associated with maladaptive appraisals of and/or reactions to pain that ultimately could predispose individuals to develop persistent pain conditions. Further research appears warranted to investigate this possibility.

Finally, many of the studies reviewed have methodological limitations that should be addressed in future research. Future studies should employ longitudinal and prospective designs with larger sample sizes, and include multiple assessments of variables such as coping, compliance with treatments, and interactions with family caregivers and health care providers, in order to better understand how attachment impacts the pain experience. This could ultimately lead to the development of empirically-based treatment approaches, including models of provider interactions tailored to attachment style. Further, additional laboratory research assessing immediate responses to acute pain can further inform the mechanisms through which attachment exerts its effects.

An additional limitation of the research to date is the use of multiple measures of attachment which makes comparison between studies difficult. Researchers should use only well-validated measures such as the Experiences in Close Relationships Questionnaire (Brennan et al., 1998). However, most attachment measures have been developed and tested in younger healthy populations, and must be examined for whether they appropriately apply to the populations examined in medical settings, and more generally in later life. For example, self-report items reflecting worry over loss of a partner possess different meaning in the context of couples facing life-threatening illness than in younger healthy populations.

Despite these limitations, the research findings to date provide intriguing if preliminary evidence regarding the importance of attachment to virtually every aspect of the pain experience from initial pain perception, through development and intensity of chronic pain, through the many issues of coping and adjustment, including interactions with medical professionals and family caregivers, health care utilization, and compliance with treatments. Attachment thus represents a promising area of investigation for pain researchers and clinicians with important implications for the understanding and treatment of persistent pain.

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